STATE OF WASHINGTON
ENERGY FACILITY SITE EVALUATION COUNCIL
PO Box 43172 • Olympia, Washington 98504-3172

November 22, 1994

Mr. J.V. Parrish
Assistant Managing Director, Operations
Washington Public Power Supply System
PO Box 968 -- Mail Room 1023
Richland, WA 98352-0968

Subject: Satsop Wildlife Mitigation - Resolution No. 275

Dear Mr. Parrish:

During its regular meeting of November 14, 1994, the Council adopted Resolution No. 275, enclosed, thereby approving the "Agreement on Management for Wildlife Mitigation" between the Supply System and the state Department of Fish and Wildlife, dated September 29, 1994. The management agreement includes the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1, dated June 28, 1994; the Satsop Power Plant Habitat Evaluation Procedure (HEP) Impact Assessment, dated June 28, 1994; and Standard Operating Procedures to implement the plan.

The Satsop Wildlife Mitigation Plan sets out land use activities and management strategies based on the results of the HEP analyses that will provide significant mitigation by preserving the high quality mature forest habitats that exist at the Satsop site. In addition, the plan preserves wetland and riparian areas identified by the state as priority wildlife habitats. The requirement for an annual coordination meeting and progress report will ensure that the plan's objectives are being met.

The Council wishes to recognize the work that the parties put into reaching agreement on a plan for managing the Satsop site consistent with mutually acceptable goals for wildlife mitigation. The Habitat Evaluation Procedure (HEP) analysis was particularly challenging, but the results provided a solid basis for evaluating the impacts and determining the best land use activities and management strategies for the site.

We look forward to your continued cooperation.

Sincerely,

Jason J. Zeller
EFSEC Manager

JJZ:MM/ks/WWL9-62

Enclosure

cc: Bill Kiel, Supply System
Laura Schinnell, Supply System
Hal Beecher, Fish and Wildlife
David Mudd, Fish and Wildlife

WASHINGTON STATE
ENERGY FACILITY SITE EVALUATION COUNCIL

RESOLUTION NO. 275

WHEREAS, the Site Certification Agreement for the Washington Public Power Supply System Nuclear Projects Nos. 3 and 5 includes the following conditions covering the protection, replacement, and/or compensation of wildlife:

> Condition IV.D.1 - "Supply System agrees to provide replacement and/or compensation, as established by the [Energy Facility Site Evaluation] Council, for any wildlife, fish or other aquatic life or ecosystem damage or loss caused by construction or operation of the project;"
>
> Condition IV.D.2 - "Supply System shall provide such additional measures for protection of wildlife, fish and other aquatic life and the ecology of areas deemed necessary by the Council to minimize adverse impact from construction or operation of the project;" and

WHEREAS, By Resolution No. 248, dated August 28, 1989, the Energy Facility Site Evaluation Council (Council or EFSEC) approved an Interim Agreement on Wildlife Mitigation and Timber Management, dated August 18, 1989, between the Washington Department of Wildlife and the Supply System, which specified that a Wildlife Mitigation Plan would be developed for the Satsop Site, and that a Habitat Evaluation Procedure (HEP) would be performed when funding allowed; and

WHEREAS, The Satsop Power Plan Site Wildlife Mitigation Plan, Revision 0, approved by Council Resolution No. 254, dated August 13, 1990, required the performance of a Habitat Evaluation Procedure (HEP) analysis of the Satsop Power Plant site to determine what impacts construction, preservation, and future operation of the project would have on wildlife, and to develop, if necessary, wildlife enhancement and mitigation measures needed to offset wildlife losses; and

WHEREAS, By letter dated November 2, 1994, the Supply System submitted an "Agreement on Management for Wildlife Mitigation (Agreement)" between the State of Washington Department of Fish and Wildlife and the Washington Public Power Supply System; and

WHEREAS, the Council has reviewed the Agreement and its attachments* and finds that it meets the requirements for wildlife mitigation and enhancement on Satsop site properties and complies with the intent of EFSEC Resolutions Nos. 248 and 254 regarding the Habitat Evaluation Procedure and revision of the Wildlife Mitigation Plan:

NOW, THEREFORE, BE IT RESOLVED, That the Energy Facility Site Evaluation Council hereby approves the Agreement on Management for Wildlife Mitigation, dated September 29, 1994 between the Supply System and the Washington Department of Fish and Wildlife; the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1, dated June 28, 1994; the Satsop Power Plant Habitat Evaluation Procedure Impact Assessment, dated June 28, 1994; and the Satsop Power Plant, Wildlife Mitigation Plan, Standard Operating Procedures. It is understood that the parties will adhere to the provisions therein; and

NOW, THEREFORE, BE IT FURTHER RESOLVED, By the Energy Facility Site Evaluation Council that EFSEC Resolution Nos. 248 and 254 are satisfied, and are considered closed.

Dated this 14th day of November, 1994.

Washington Energy Facility Site Evaluation Council

By: Frederick S. Adair
Frederick S. Adair, Chairman

Attest:

By: _____
Jason J. Zeller, EFSEC Manager

*Attachments to the Agreement on Management for Wildlife Mitigation between the Supply System and the Washington Department of Wildlife, dated September 29, 1994 include: the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1; the Satsop Power Plant Habitat Evaluation Procedure Impact Assessment, dated June 28, 1994; and the Satsop Power Plant, Wildlife Mitigation Plan, Standard Operating Procedures.

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 1223 • Elma, Washington 98541-1223 • (206) 482-4428

August 12, 1994
G03-94-0175
G05-94-0016

Mr. Hal Beecher
EFSEC Coordinator
Washington Department of Fish and Wildlife
600 Capital Way North
Olympia, WA 98501-1091

Dear Mr. Beecher:

Subject: **NUCLEAR PROJECT NOS. 3 AND 5**
WILDLIFE MITIGATION PLAN

Enclosed please find a Memorandum of Understanding and copies of the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1; Standard Operating Procedures; and Habitat Evaluation Procedure (HEP) Impact Assessment for review and approval. These documents have been reviewed by Department of Fish and Wildlife and Supply System staff and are consistent with agreements reached by the Satsop HEP team.

After the Department of Fish and Wildlife has approved the Memorandum of Understanding, we will transmit copies of the documents to the Energy Facility Site Evaluation Council for their concurrence. Therefore, please retain one copy of the original Memorandum of Understanding for your files, and return one copy to the Supply System.

If you have questions, please contact Ms. Laura Schinnell at SCAN 566-5409.

Very truly yours,

W.G. Counsil
Managing Director

Enclosures:
1) Memorandum of Understanding
2) Satsop Power Plant, Wildlife Mitigation Plan, Revision 1, dated June 28, 1994
3) Satsop Power Plant, Wildife Mitigation Plan, Standard Operating Procedures
4) Satsop Power Plant, Habitat Evaluation Procedure Impact Assessment, dated June 28, 1994

cc: Mr. D. Guy, Washington Department of Fish and Wildlife
Mr. G. Oakerman, Washington Department of Fish and Wildlife
Mr. M. Mills, Energy Facility Site Evaluation Council
Mr. J.R. Lauckhart, Puget Sound Power & Light Co.
Mr. W.L. Bryan, Washington Water Power Co.
Mr. E.M. Burton, PacifiCorp
Mr. J.E. Cross, Portland General Electric Co.

AGREEMENT ON MANAGEMENT FOR WILDLIFE MITIGATION BETWEEN THE STATE OF WASHINGTON DEPARTMENT OF FISH AND WILDLIFE AND THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM

I. INTRODUCTION

The Wildlife Mitigation Plan, Rev. 0, as approved by the Energy Facility Site Evaluation Council (EFSEC) Resolution No. 254, dated August 14, 1990 requires the performance of a Habitat Evaluation Procedure (HEP) analysis of the Satsop Power Plant site to determine what impacts construction, preservation, and future operation of the project will have on wildlife, and to develop, if necessary, wildlife enhancement measures needed to offset wildlife impacts.

The Satsop HEP analysis has been completed, and a wildlife mitigation plan developed based upon the HEP analysis.

II. MITIGATION FOR WILDLIFE

Each Party entering this Agreement accepts the performance and analysis of the Habitat Evaluation Procedure, as summarized by the Satsop Power Plant Habitat Evaluation Procedure Impact Assessment, dated June 28, 1994, as the standard for the determination of required wildlife mitigation.

The Parties have jointly developed the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1. The Parties understand and intend that the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1, supercedes and replaces the Wildlife Mitigation Plan, Revision 0.

Each Party understands and agrees to fulfill its obligations under the Satsop Power Plant Site Wildlife Mitigation Plan, Revision 1, which is attached to this Agreement and incorporated by reference.

III. STANDARD OPERATING PLAN

Each Party agrees to terms and conditions set out in the Satsop Power Plant, Wildlife Mitigation Plan, Standard Operating Procedures for Satsop site lands, which is attached to this Agreement and incorporated by reference.

IV. MISCELLANEOUS

A. Terms of Agreement

This agreement becomes effective on the date of last signature and continues in force for the evaluation period ending in 2040 or throughout the period of the Site Certification Agreement for Nuclear Projects No. 3 and No. 5 between the State of Washington and the Washington Public Power Supply System, dated October 27, 1976, or as amended.

B. Modifications to Agreements

Modifications to this agreement may be recommended by either Party and put into place upon written concurrence by both Parties.

C. Dispute Resolution

It is anticipated that any dispute that arises under this agreement will be resolved by the respective staffs working directly on this matter. Should that not be possible, disputes shall be elevated through the respective chain-of-command up to the Director of the Department of Fish and Wildlife and the Supply System Managing Director. In the unlikely event that a dispute should remain unresolved through this process, either party may submit the dispute to the Energy Facility Site Evaluation Council for resolution.

D. Waiver of Default

Any waiver at any time by any Party hereto of any right with respect to any matter arising in connection with this agreement shall not be considered a waiver with respect to any subsequent default or waiver.

E. Assignment

This agreement shall be binding on all successors or assignees.

SIGNATURE

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

W.G. Counsil 7/27/94

By W.G. Counsil, Managing Director — Date

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

Robert Turner 9/29/94

By Robert Turner, Director — Date

SATSOP POWER PLANT SITE

WILDLIFE MITIGATION PLAN

REVISION 1

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

JUNE 28, 1994

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1.0 INTRODUCTION

The Satsop Power Plant Site Wildlife Mitigation Plan, Revision 0, dated May 29, 1990 required the completion of a Habitat Evaluation Procedure analysis to determine what impacts construction, preservation, and operation of WNP-3 and WNP-5 might have on wildlife, and to develop, if necessary, wildlife enhancement and mitigation measures needed to offset wildlife losses.

Following determination of the impacts, and review of management strategies to offset the impacts, the wildlife mitigation plan was to be revised to provide compliance with the Site Certification Agreement for WNP-3 and WNP-5 between the Washington Public Power Supply System and the State of Washington which states in Condition IV.D.1: "Supply System agrees to provide replacement and/or compensation, as established by the (Energy Facility Site Evaluation) Council, for any wildlife, fish or other aquatic life or ecosystem damage or loss caused by construction or operation of the projects." This document (Revision 1) contains the actions necessary to comply with the conditions of the Site Certification Agreement and EFSEC Resolution No. 254, which approved Revision 0 of the Satsop Power Plant Site Wildlife Mitigation Plan. Revision 1 replaces Revision 0.

The Supply System's goal for wildlife mitigation is to manage Satsop Power Plant lands to ensure the integrity of natural ecosystems, and maintain or enhance the diversity, abundance and distribution of native wildlife and their habitats. This plan will ensure the security of wildlife species populations endemic to the Satsop site. Table 1, Total Acres of Habitat Types by Target Year, provides a summary of the habitat cover types and the changes that will occur in each over time.

2.0 PRIORITY HABITAT MANAGEMENT

The Supply System recognizes that the Washington Department of Fish and Wildlife (WDFW) has identified wildlife habitats that are to receive priority management and mitigation as described in *Goals, Policies and Objectives by the Washington Wildlife Commission* (Washington Department of Wildlife, March 1991). Priority wildlife habitats found associated with the Satsop Power Plant site include: wetlands, riparian habitat, and mature forests.

Past efforts to control soil erosion have created a number of small ponds and associated wetlands, which are located in the Purgatory, Stein, and Fuller creek basins, and also include the equalization and settling pond. The wetland management strategy is therefore to preserve existing wetlands by maintaining existing pond water control structures.

The riparian mitigation strategy includes preserving existing riparian habitat by designating a system of riparian preservation areas as shown in Figure 1, which establishes the boundaries. These areas are generally located in the Purgatory Creek basin from the P-1 pond to the site boundary near the Chehalis River, the Fuller Creek basin, and along Workman and Stein creeks in the Workman Block.

The primary objective of forest habitat management is to provide conditions suitable for viable populations of wildlife species dependent upon forest habitats. This objective will be met by preserving and planning for the future development of mature forests.

3.0 LATE SUCCESSIONAL HABITAT MANAGEMENT

Late successional habitat at the Satsop site consists of 165 acres of mature coniferous forest and 186 acres of mixed coniferous/deciduous forest (see Table 1). All the conifer within these management areas comprise stands that were logged at least once prior to Supply System ownership. The dominant specie is Douglas-fir, with overstory trees averaging 80 years of age. The mature conifer stands classified as C4 contain at least 20 stems per acre with a 21 inch or greater diameter at breast height (DBH), and a 70 percent or greater canopy closure, with trees over 40 feet high. These conifer stands are interspersed with western hemlock, western red cedar and red alder. The existing mature mixed stands consist primarily of red alder, Douglas-fir, and western hemlock, with a lesser amount of red cedar, sitka spruce, bigleaf maple, and black cottonwood. Mixed stands contain stems greater than 12 inches DBH and less than 21 inches DBH. The average age of the mixed forest ranges from 40 to 80 years. The distribution of conifer to deciduous in the mixed stands ranges from small clumps of conifer to fairly uniform interspersion of species. Some stands contain non-stocked pockets with little to no overstory.

The Supply System applied silvacultural treatments to 81 acres of the coniferous stands between 1989 and 1992 (see Table 1) wherein approximately 30 percent of the volume was removed by commercial thinning to open the canopy, improve spacing and maintain vigorous growth in the remaining stand. Thinning resulted in the C4T stands possessing different characteristics than the unthinned stands. Field data in 1991 showed that thinnings reduced the average DBH in the stands. The canopy crown closure was reduced allowing infiltration of sunlight to the forest floor. Some thinned areas already reflect an improved ground cover and understory release wherein hemlock seedlings are growing. Over time the shade tolerant species will result in a multi-layered canopy beneficial to many wildlife species.

The Supply System will manage the existing 82 acres of mature coniferous forest (C4), 81 acres of coniferous forest thinned (C4T) and 186 acres of mixed coniferous/deciduous forests (M3) by allowing them to evolve naturally (see Table 1 and Figure 2). In time they are expected to develop some of the characteristics of old-growth forests. The long term management objective is to provide stable, continuous habitat conditions for wildlife species dependent on mature/old-

growth forests. These forest stands will develop or be maintained in optimal condition for thermal cover for black-tailed deer, large snag habitat for cavity nesters such as the pileated woodpecker, and nesting and perching raptor habitat.

In conclusion, the goal will be preservation of existing mature stands, and management shall be protection. These habitats will be protected by limiting road access and no harvesting activity. Natural succession will be allowed to occur, with monitoring as described in Section 13. Vehicular access to permanent roads owned by the Supply System will be limited by placing gates or other barriers across the roads.

4.0 MID-SUCCESSIONAL HABITAT MANAGEMENT

4.1 DECIDUOUS FOREST HABITAT MANAGEMENT

A total of approximately 97 acres of mature (H3) deciduous forest, composed almost exclusively of red alder, exist at the Satsop site (see Figure 3). These forest stands vary from almost pure alder to stands consisting of red alder and big leaf maple, interspersed with small pockets of immature conifer. Hardwoods in these stands range in DBH from 12 inches to 21 inches. The goal will be preservation of the existing stands, and management shall be protection. Natural succession will be allowed to occur. Vehicular access to permanent roads owned by the Supply System will be limited by placing gates or other barriers across the roads.

4.2 CONIFER FOREST MANAGEMENT

The Satsop site does not currently contain mid-successional conifer forests, defined as conifer ranging from 12 inches to 21 inches DBH (C3) and conifer ranging from 4 inches to 12 inches DBH (C2). By 2015, approximately 144 acres of land are expected to develop to C2 mid-successional stands from existing young conifer. Based on Soil Conservation Service soil maps for Grays Harbor County (Sheets #54 and #61), most Satsop site soils are in the Centralia or Buckpeak soil series and have forest productivity site indexes varying from 130-140. For a 50-year rotation this would indicate a high Site II to low Site I Douglas-fir productivity potential. Therefore, it is expected to take 30 years to produce stems with a 12 inch average DBH in a fully stocked Douglas-fir stand.

The Supply System will manage future mid-successional conifer forests by initiating a series of thinnings starting in the Workman Block and those stands planted elsewhere between 1989 to 1992 to improve spacing and growth capability.

. Thinning operations will occur between 2015 and 2040.

- Stands that have favorable topography (less than 35 percent slope and well-drained soils) will have tractor-skidder equipment utilized. Stands that comprise slopes over 35 percent will have cable/carriage equipment for harvesting.

- Codominant and subdominant conifer trees will be selected to provide an average 18 foot spacing. The remaining conifer stand will average stems greater than 12 inch DBH. Biggest and best conifers will be retained.

- Thinning will be to no less than 150 conifer overstory stems per acre.

- Thinning will be to no less than 70 percent overstory canopy crown closure as measured by densiometer, with trees at least 40 feet tall.

- Snags or snag recruitment trees (if necessary to meet target of two snags per acre) will be created in clumps with Douglas-fir >20 inch DBH targeted, by topping at time of thinning operations. If 20 inch DBH trees are not available, the largest diameter tree available will be taken. Existing snags will be protected.

- If a shade tolerant understory (50 stems per acre) has not developed by the time of thinning, cedar and hemlock will be interplanted.

- Thinning will target hardwoods except cottonwood.

- Retain cedar and hemlock, unless it is physically impossible, or if closed-in stands exist which could benefit from thinning. Retain all cascara, chokecherry, elderberry, and other species beneficial to wildlife where possible.

- Skid trails and landings will be seeded with the mix described in Appendix A.

- When utilizing understory carriage skidding operations to accomplish the commercial thinnings, skid paths should be 6 to 10 feet wide, located along roads where possible, and a minimum of 200 feet apart.

- Vehicular access to permanent roads owned by the Supply System will be limited by placing gates or other barriers across the roads.

5.0 EARLY SUCCESSIONAL HABITAT MANAGEMENT

The area known as the Workman Block is located in the southern most portion of the site. The area has a southerly aspect and moderate to steep slopes. The Supply System purchased the land in 1982 with the stipulation that the seller could remove the merchantable timber within three years. Approximately 160 acres were clearcut in 1985 and replanted in 1986 by the seller.

Fast-growing red alder and a healthy mountain beaver population combined to impede adequate conifer stocking levels. Interplantings, mountain beaver control, and finally an aerial herbicide treatment followed by conifer interplanting on approximately 68 acres have resulted in adequate conifer stocking levels.

It is expected that approximately 92 acres will grow into a mixed conifer/deciduous forest with overstory trees over 50 years of age by 2040. These young mixed stands contain randomly open areas that presently sustain multiple brush species such as thimbleberry, blackberry and salmonberry. Also present are elderberry, vine maple, chokecherry, willow, cascara and Indian plum. It is anticipated that these areas will maintain adequate cover and vegetative species diversity, providing high wildlife value. The 68 acres that were treated with herbicides and interplanted with Douglas-fir are expected to remain predominantly conifer with some red alder and bigleaf maple comprising the overstory.

5.1 YOUNG CONIFER FOREST STANDS

In addition to the 68 acres of young conifer forest habitat (designated C1, with 1-4 inches DBH stems), in the Workman block, there are approximately 76 acres of C1 habitat that are the result of land management activities and/or natural regeneration located around the central site area. Management objectives in all C1 stands include:

- On planted sites a minimum of 300 conifer seedlings per acre will be established and/or maintained.

- Pre-commercial thinnings may be used to target invading alder. Thinning should result in no less than 215 stems (conifer) per acre and occur when trees are greater than 6 feet and less than 10 feet tall. Thinning at an early age will result in sustaining the forage successional stage for a longer period, which benefits black-tailed deer and other early successional species.

5.2 YOUNG MIXED AND DECIDUOUS STANDS

There are approximately 99 acres of young mixed coniferous/deciduous habitat (designated M1 with 1-4 inch DBH stems) and deciduous habitat (designated H1 with 1-4 inch DBH stems), located mostly within the Workman Block. Nearly all the young mixed conifer/deciduous and deciduous stands outside the Workman Block are established on land cleared during project construction or along right of ways. There is also approximately 5 acres of larger early successional mixed conifer/deciduous habitat (designated M2 with 4-12 inch DBH stems) in the Workman Block. The management objective for young mixed and deciduous stands and larger early successional mixed conifer/deciduous (see Figure 4) is to allow them to evolve naturally into mature conifer/deciduous and deciduous forest stands. The preservation of these young deciduous and mixed conifer/deciduous forest stands will ensure habitat diversity across the

Satsop site landscape. Retaining the red alder stands which have soil enhancing nitrogen fixing root nodules, will aid in the long term restoration of areas disturbed during construction.

6.0 ROOT ROT POCKETS

Laminated root rot is a disease caused by the fungus *Phellinus weirii*. Laminated root rot in its active stage expands at a fairly steady rate over the years. It attacks conifers, but is most lethal to Douglas-fir and grand fir. In the most virulent infections where there is not a significant component of the forest stand composed of shade and disease resistant trees (hemlock and cedar), the root rot disease centers will continue to expand. These areas will be prone to windthrow and will be dominated by fallen trees and dense shrub stands. Root rot infected trees do not stand long enough to make good wildlife snag habitat trees.

Root rot containment will be conducted in areas where virulent pockets exist and little to no understory is present. Root rot centers will be cleared of all infected trees and one additional live tree width. Cleared areas will be planted with shade tolerant and disease resistant tree species. Two areas have been identified for treatment: one of 1.1 acres and one of approximately 0.5 acres (see Figure 5). The Supply System plans to conduct treatment in these areas in 1994 or 1995. Treatment will include removal of infected trees plus one additional tree (one tree space) toward the healthy stand. The areas will be reforested with western red cedar and western hemlock. While preserving the mature forests, cleared root rot pockets will produce small openings in the forest canopy, increasing forest stand structure diversity that will be beneficial to a variety of wildlife.

7.0 SHRUB AND FORAGE ENHANCEMENT

7.1 ENHANCEMENT OF BRUSH (BPA CORRIDOR)

The Supply System met with Bonneville Power Administration staff in December 1993 to discuss the possibility of a joint effort to enhance approximately 16 acres (B-095, B-106, B-096) of the BPA transmission corridor for wildlife habitat. This area is currently typed as brush and under the current lease agreement, BPA maintains the corridor by mechanically cutting down vegetation such as alder or any species with the potential to grow beyond 10 feet in height. The area is heavily infested with scotchbroom, an exotic undesirable shrub species. In addition to scotchbroom, the area predominantly consists of grasses, small alder and some vine maple.

In the spring of 1995 or 1996, this area will be enhanced to increase food and cover favorable for the towhee and deer. Activities will consist of:

- Invading scotchbroom and tall tree species (vine maple will be left) will be mechanically removed.

- Scotchbroom that resprouts will be treated with herbicides.

- A grass/forb mix and trailing blackberry seed (if available) will be introduced followed by an application of 12-12-12 fertilizer.

- Shrub clumps will be planted with concentration planned along the forest's edge. Suggested species, if available are cascara and redosier dogwood.

- Invading tree species will be removed at five year intervals. Spot herbicide treatment will be performed on invading scotchbroom or alder as needed.

Success of the above efforts will greatly increase this area's benefit for wildlife use. In addition to providing more palatable forage for black-tailed deer, the area will be more diverse in structure, providing near optimal habitat for early successional wildlife species such as towhee. It is expected that 70 percent of the ground will be covered with grasses/forbs and trailing blackberry, 20 percent with shrubs, and 10 percent with downed wood and stumps that currently exist. Slash will be controlled by distribution, piling to create small habitat cover, or chipping and scattering.

7.2 METEOROLOGICAL TOWER FIELD

In 1989 young forest stands of alder (H1) were mechanically removed and piled to create microhabitats in the meteorological tower field. Spirea and snowberry shrubs were planted around the alder piles in 1990. Douglas-fir seedlings were planted along the forest road on the northern edge and as a buffer strip along the eastern edge of the laydown tree screen. Also in 1990, the grass field at the meteorologoical tower was disked, plowed, fertilized and seeded with a grass/forb mix. The objective is to maintain this approximately 9 acre field as an open grass and foraging area for wildlife. Proposed management for the grassed area is to mow annually, and fertilize in the fall.

8.0 SNAG MANAGEMENT

At the time future mid-successional conifer forest stands are commercially thinned, snag inventories will be conducted. Areas with insufficient numbers of large snags (averaging less than 2 snags per acre with 21 inch or greater DBH and 30 feet tall), will be enhanced by snag creation techniques. The currently preferred technique for creating snags is to use explosives to top the trees. Douglas fir are the preferred species, with a DBH of 21 inch or greater, and sufficiently tall to create a snag of at least 50 feet in height. Where there are no conifers with a DBH of 21 inch or greater, the next preferred conifers are those with the largest DBH in appropriate locations.

Naturally occurring snags will be protected. Snags in active areas will be marked with a sign stating that the snag is a wildlife tree, please protect.

9.0 POND MANAGEMENT

Past erosion control efforts created ponds in Fuller, Purgatory, and Stein creeks. In addition, two major ponds (equalization and settling ponds) were constructed in the central site area to retain and treat storm water runoff. These habitats will be preserved. The present practice of maintaining dam structures will be continued, whereby undesirable vegetation and debris is removed.

The Supply System will endeavor to operate the equalization and settling pond system so that water is maintained in the equalization pond as long as possible into the summer, thereby keeping soils moist.

10.0 PRESERVATION ZONES

Preservation zones are shown in Figure 1. These zones encompass the major riparian areas and contain several cover types. The principal cover type is mature mixed coniferous/deciduous forest comprised of Douglas fir, red cedar, western hemlock, and red alder. Management of the preservation areas is to allow these areas to evolve naturally. No land management or wildlife enhancement activities will be conducted in these areas, even should a catastrophic loss of habitat occur.

11.0 PERIPHERAL AGREEMENT

As part of the HEP process, Supply System and WDFW staff determined that the best interests of all parties could be served by developing a separate management agreement for properties which were not joined or integral to the Satsop site central area. These properties have been designated Peripheral Lands.

On October 29, 1993 the Washington Department of Wildlife (now Washington Department of Fish and Wildlife), and November 11, 1993 the Supply System signed the *Agreement on Management for Wildlife Mitigation on Peripheral Satsop Site Properties Between the State of Washington Department of Wildlife and The Washington Public Power Supply System.* A copy of this agreement is provided in Appendix B.

The objective of that management agreement is to recognize the permanent loss of 32 acres of habitat, and to set aside the available 279 acres of disjointed parcels (138 acres which were altered) to allow for the preservation of riparian, wetland, and mature forest habitats.

12.0 MAINTENANCE ACTIVITIES

The Supply System may perform, as necessary, the following maintenance activities:

- Road maintenance, including but not limited to: grading, ditching, repairs, seeding, obstruction tree removal.

- Weed control, including use of pesticides in accordance with U. S. Environmental Protection Agency and Washington State Department of Agriculture requirements. Generally, spot spraying is the preferred treatment when pesticide application is necessary. The Supply System shall provide proper training and appropriate supervision of employees or contractors to ensure that only targeted vegetation is sprayed.

- Erosion control, including but not limited to: slope repair, removal of eroded material, ditch maintenance, culvert maintenance, and vegetation planting to assist in erosion control.

- Maintenance of existing pipelines, electrical conduit and systems including right of ways associated with plant operations. This includes all normal servicing, provisioning, and related activities associated with the preservation, continued construction or operation of Satsop facilities.

- Protection from fire, theft, trespass and vandalism.

- Mountain beaver population may be controlled, generally by trapping.

- Placement of signs as appropriate including but not limited to signs indicating management for wildlife benefits, no hunting, gate approach warnings, and no forest product removal.

- In the advent of a large scale disruption of habitat matrix such as fire, significant windthrow, major disease or insect infestation affecting 50 acres or more outside the riparian preservation areas and lands contained in the Peripheral Agreement and upon written concurrence of both the Supply System and WDFW, appropriate habitat management activities will be authorized to restore and/or maintain habitat objectives for the affected area. Lands inside the boundaries of the riparian preservation areas and areas contained in the Peripheral Agreement are excluded from entry for catastrophic habitat restoration and/or maintenance activities.

  Where emergency response is required, such as in the case of forest fire, response to control the emergency will be taken, with no prior concurrence from WDFW. Verbal notification of the emergency will be provided as soon as practical.

Costs associated with restoring the habitat are the responsibility of the Supply System, however, such costs may be off-set by the marketing of salvaged forest products post disruption when such salvage has been agreed to in writing.

12.1 ROAD MAINTENANCE

The Supply System has maintained a road system with restricted access on the Satsop Power Plant site. Classification and measurement of "open and closed" roads is done as a measurement of human harrassment to wildlife. A "closed road" is defined as:

- A road that has a physically restricted access (i.e., gate, road block, or bedded)

- Roads that have a minimum use. This has been defined as "one trip per month." This level of use has been established to describe a road system that receives infrequent low intensity use which has minimal impact on the wildlife species inhabiting the Satsop Power Plant site. Minor seasonal or annual variations in use levels are acceptable, providing there is limited or no harassment to wildlife.

Road status for this Wildlife Mitigation Plan is based on current conditions and known future changes. If the status of projects at the Satsop Power Plant site changes, these changes will be addressed through the annual coordination meetings. The following criteria for "open and closed" roads applies:

- Gated roads used only for environmental monitoring and security of the Satsop Power Plant site would be considered "closed." To meet management and site certification requirements the Supply System must retain limited vehicle access to some portions of the site lands.

- Gated roads used to access project facilities would be considered "open." Future management needs require potential use levels higher than "one trip per month."

- Gated roads used for grassland enhancements (meteorological tower field) and forest thinnings would be considered "closed."

- Forest management sites requiring road use for a number of years will be considered "open." Activities include site planning, implementation, reforestation, and monitoring phases.

- Gated roads that the Supply System must provide easement to adjoining landowners would be considered "open."

- All ungated or unblocked roads will be considered "open."

Using these criteria, the following roads will be considered "closed:"

- spur line east of cooling tower #3
- spur line southwest of the BPA right-of-way accessing the C4T sites
- short spur line west of the equalization pond and spur line around the equalization pond
- spur lines where the blowdown line crosses Fuller Creek
- meteorological tower field access road beyond the house
- spur line access to the blowdown line by the Chehalis River
- Workman Block road
- short spur line in the southwest corner of the Workman Block

13.0 MONITORING PROGRAM

In the first quarter of each calendar year, prior to the start of new activity, a coordination meeting will be held at the Satsop site to present a summary of the previous year's efforts, as well as a description of proposed work. Staff may perform a field review of the previous year's activities, and survey proposed work locations in the field. An annual progress report, which may be included as a section of other Energy Facility Site Evaluation Council required annual reports, will be presented to EFSEC with a copy to WDFW.

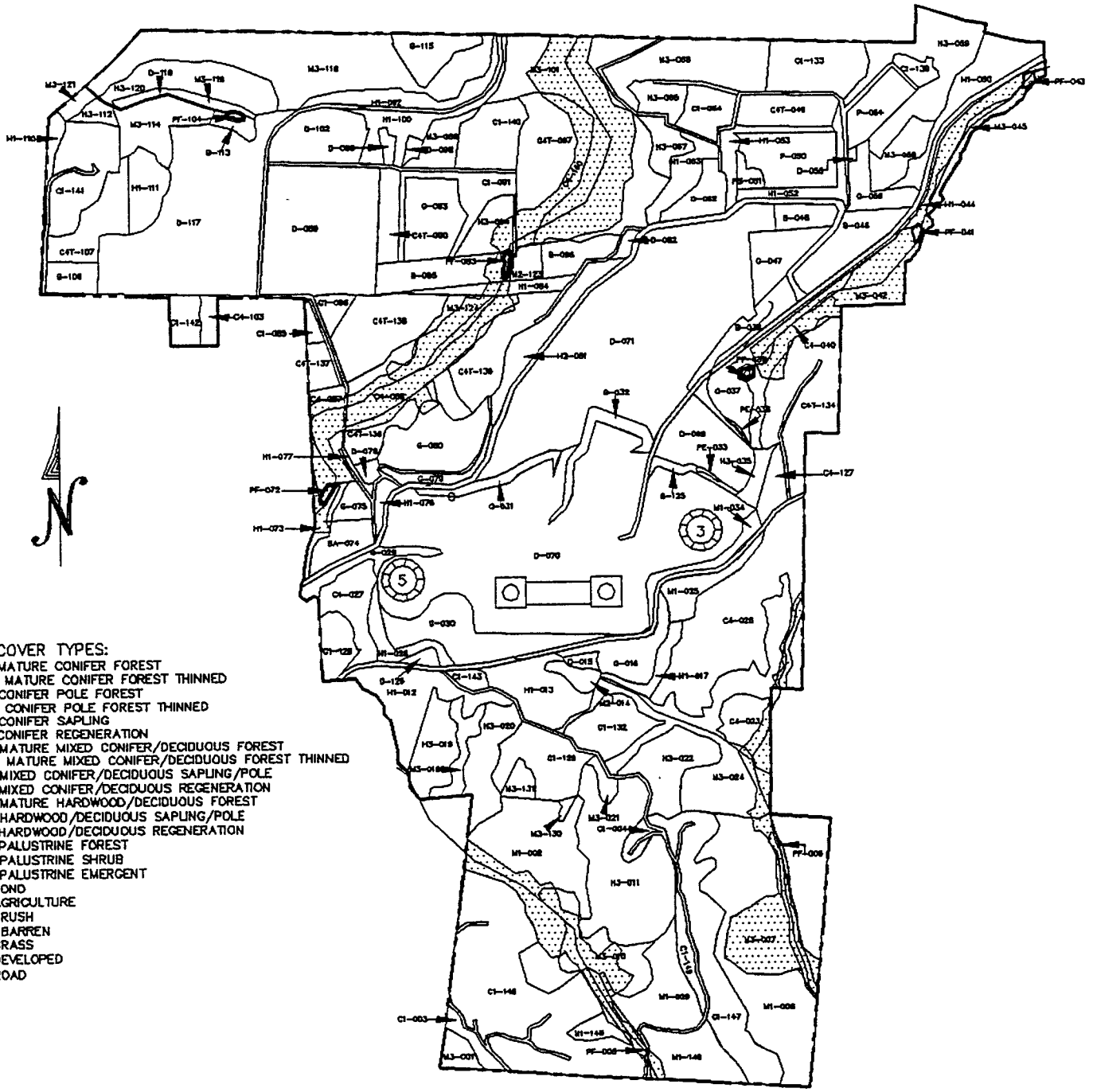
Prior to initiating activity, a Forest Practices Application will be prepared using input received from WDFW staff during the annual coordination meeting. As presently shown in Table 1 and Figure 6, root rot prescription and commercial thinning activities are planned in Calendar Years 1994/1995, 2019, 2022, 2025, 2028, 2031, 2037, and 2040. Additional monitoring may be undertaken by WDFW staff during these years.

Some variation in schedule for the activities shown in Table 1 may occur. By agreement with WDFW staff a time band of plus or minus three years is acceptable. Variations will be discussed during the annual coordination meeting.

Habitat projections will be field checked by Supply System staff as part of the planned activities for 2015. The limited field check will be structured to provide a reasonable evaluation of the primary cover type characteristics of the central site area. An assessment of the findings, as determined by Supply System and WDFW staff, will be provided as part of the annual report to EFSEC.

REFERENCES

Washington Department of Wildlife, *Goals, Policies and Objectives by the Washington Wildlife Commission*, March 8, 1991.



HEP COVER TYPES:
C4 – MATURE CONIFER FOREST
C4T – MATURE CONIFER FOREST THINNED
C3 – CONIFER POLE FOREST
C3T – CONIFER POLE FOREST THINNED
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C1 – CONIFER REGENERATION
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M2 – MIXED CONIFER/DECIDUOUS SAPLING/POLE
M1 – MIXED CONIFER/DECIDUOUS REGENERATION
H3 – MATURE HARDWOOD/DECIDUOUS FOREST
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H1 – HARDWOOD/DECIDUOUS REGENERATION
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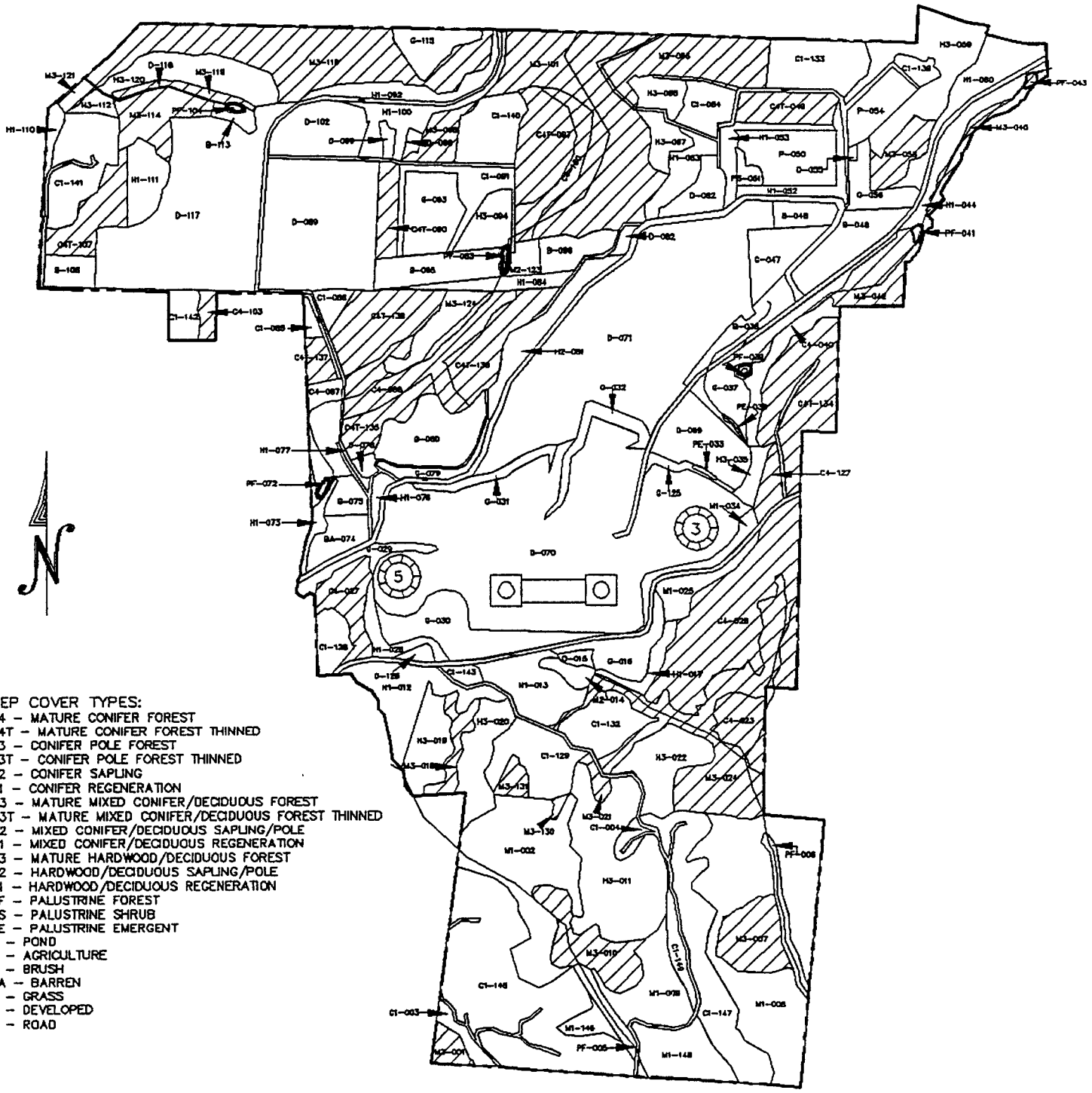
PS – PALUSTRINE SHRUB
PE – PALUSTRINE EMERGENT
P – POND
A – AGRICULTURE
B – BRUSH
BA – BARREN
G – GRASS
D – DEVELOPED
R – ROAD

PRESERVATION AREA

FIGURE 1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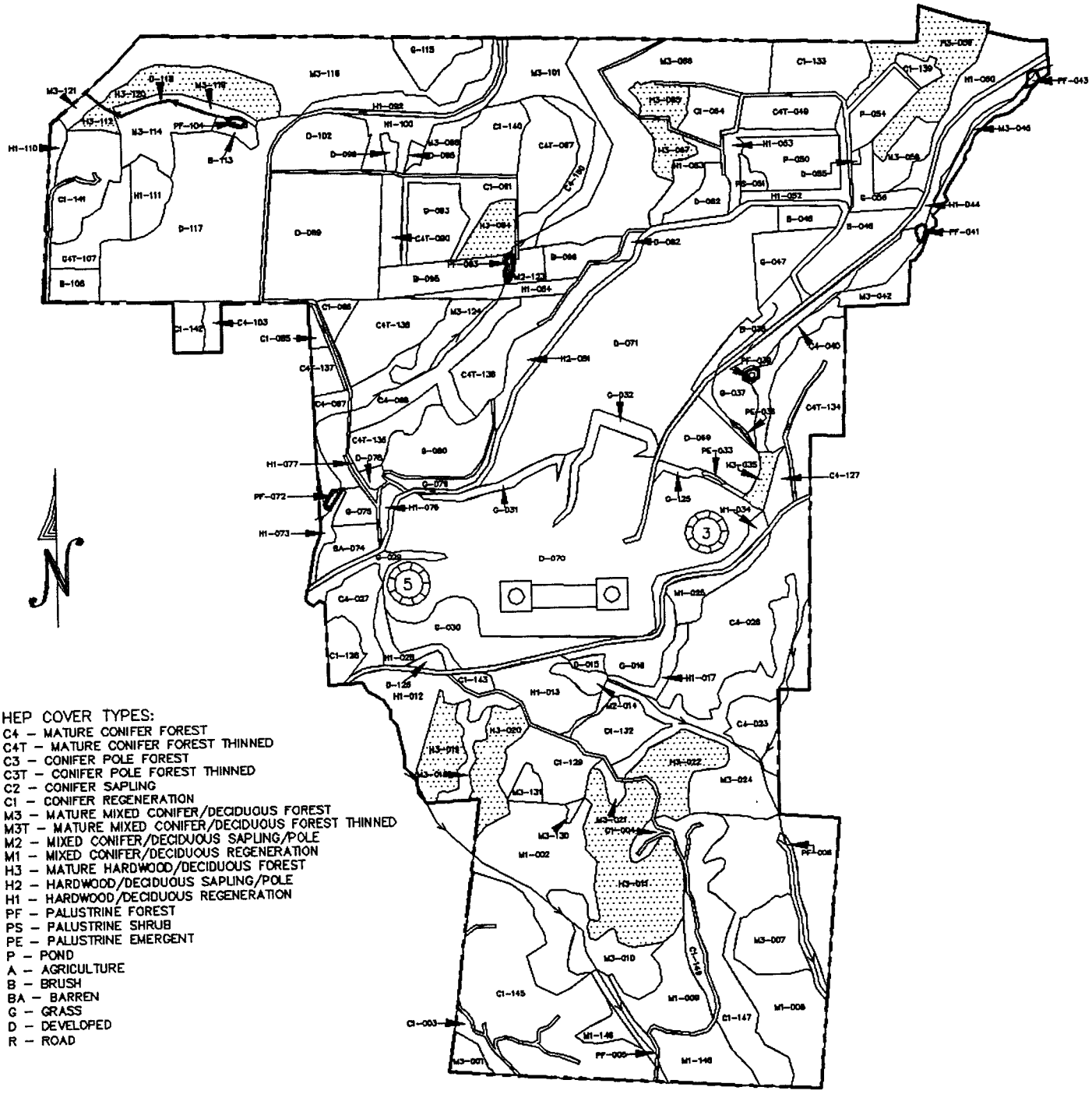
MATURE CONIFEROUS AND MIXED CONIFEROUS/DECIDUOUS FORESTS

FIGURE 2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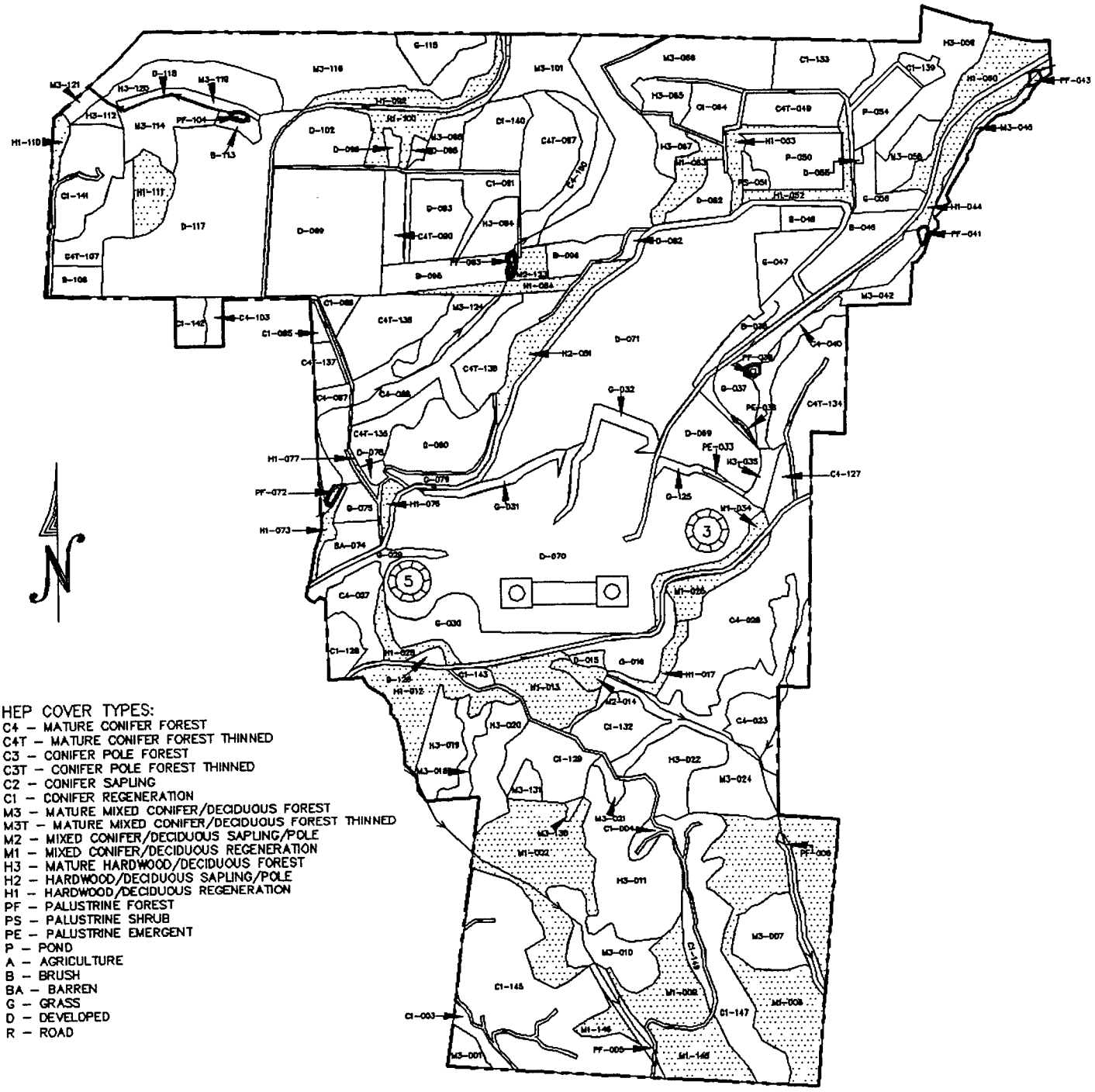
MATURE DECIDUOUS FORESTS

FIGURE 3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R – ROAD
EARLY SUCCESSIONAL
MIXED AND DECIDUOUS STANDS

FIGURE 4

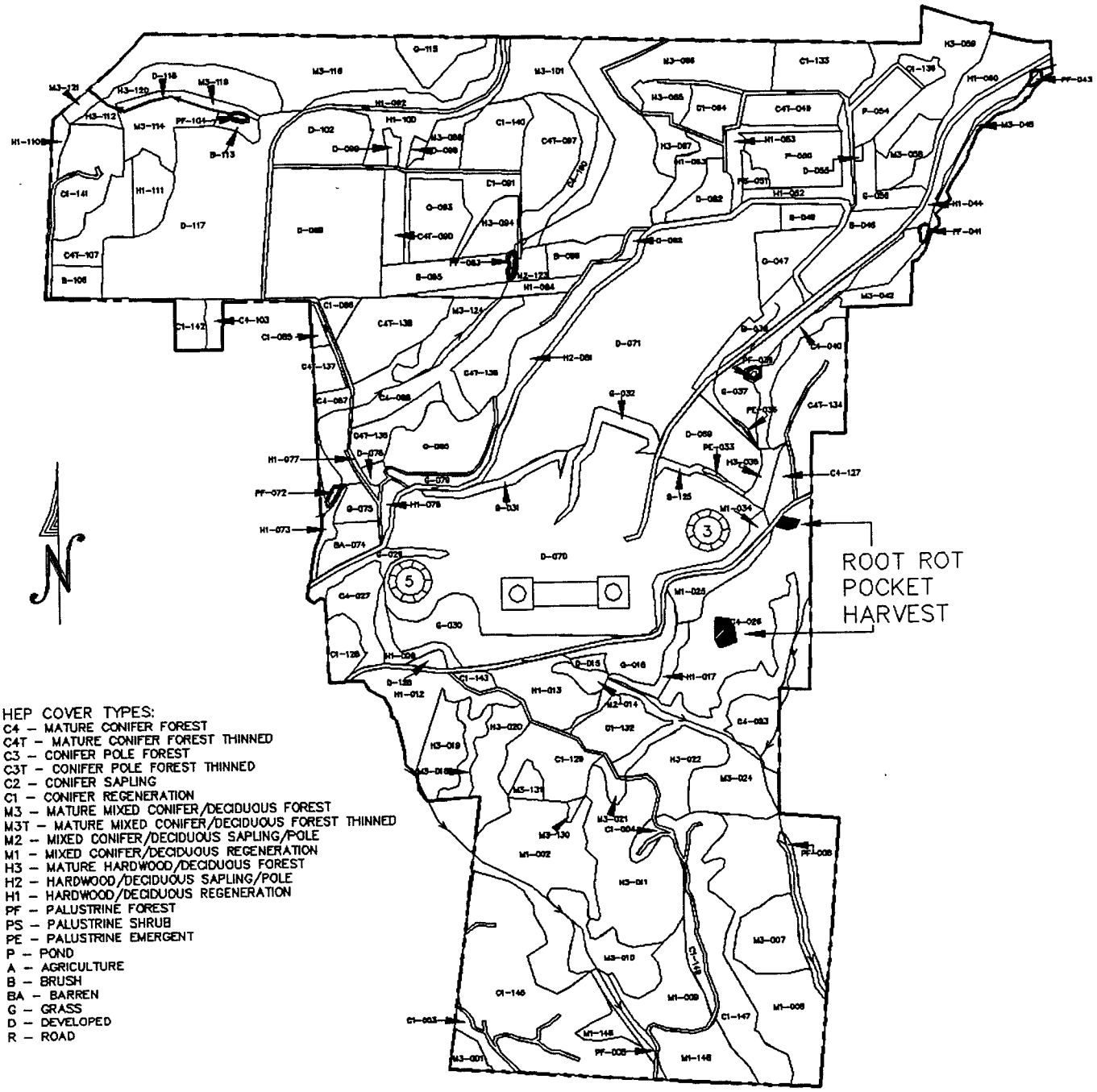
ROOT ROT
POCKET
HARVEST
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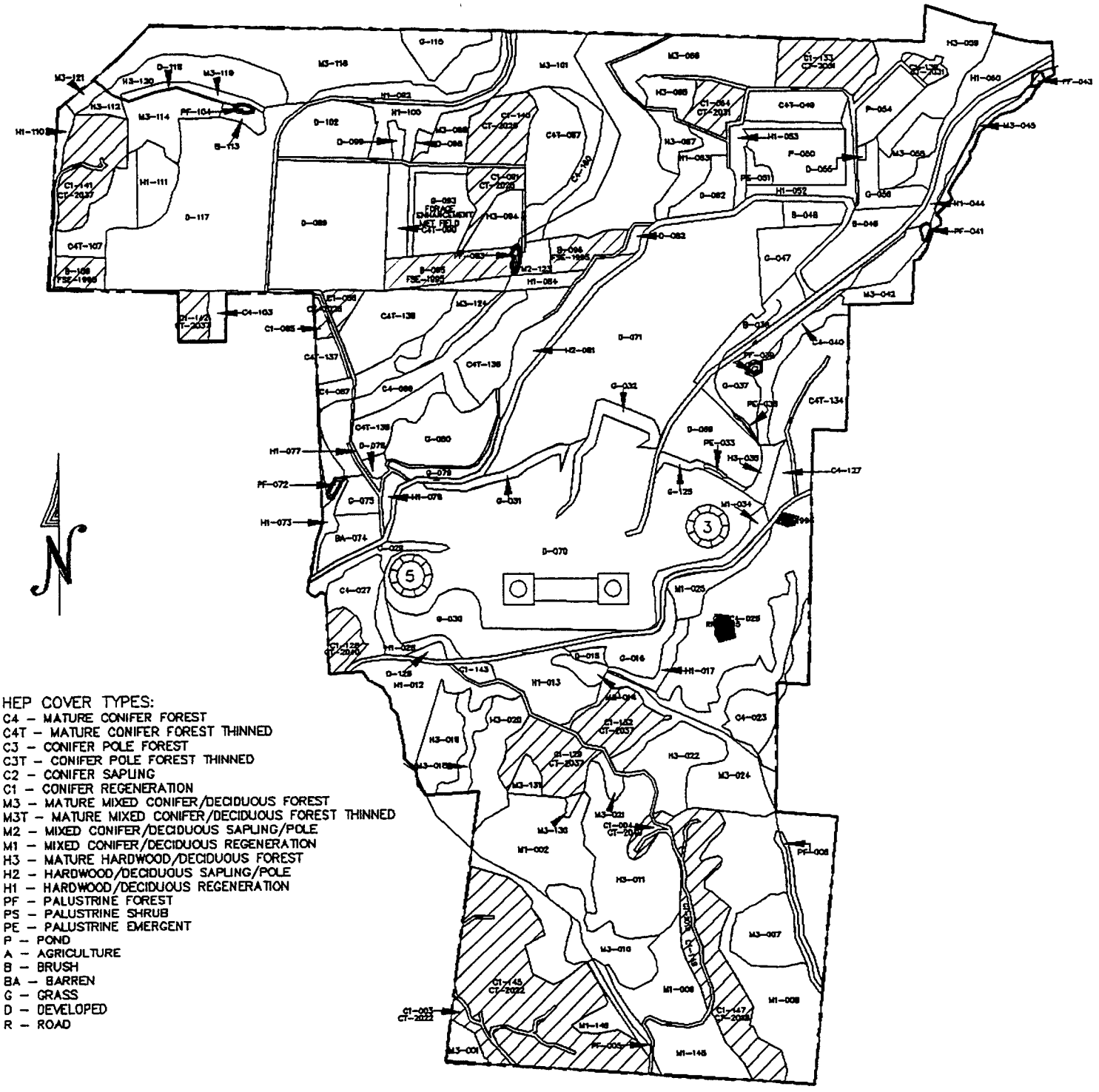
FIGURE 5

FIGURE 6



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FUTURE MITIGATION WORK AND PROPOSED YEAR OF ACTIVITY

CT – COMMERCIAL THIN

FSE – FORAGE/SHRUB ENHANCEMENT

TABLE 1. TOTAL ACRES OF HABITAT TYPES BY TARGET YEAR

HABITAT TYPE			WITHOUT PROJECT	WITH PROJECT WITH MITIGATION				
			TY 1976	TY 1978	TY 1989	BY 1993	TY 2015	TY 2040
BA		BARREN GROUND	0	226	5	5	0	0
B		BRUSH LAND	80	31	35	35	35	30
C1	0-4" DBH	CONIFER	272	0	0	144	2	0
C2	4-12" DBH	CONIFER	0	0	0	0	144	2
C3	12-20" DBH	CONIFER	9	0	0	0	0	3
C4	> 20" DBH	CONIFER	267	167	167	84	82	163
C3T	12-20" DBH	CONIFER THINNED	0	0	0	0	0	141
C4T	> 20" DBH	CONIFER THINNED	0	0	0	81	81	0
D		DEVELOPED	5	290	292	292	292	292
G		GRASS LAND	40	28	67	87	64	64
H1	0-4" DBH	HARDWOODS	3	0	145	96	0	0
H2	4-12" DBH	HARDWOODS	28	0	0	0	113	0
H3	> 12" DBH	HARDWOODS	101	104	104	97	97	210
M1	0-4" DBH	MIXED	167	162	168	99	0	0
M2	4-12" DBH	MIXED	3	0	4	4	109	5
M3	> 12" DBH	MIXED	275	223	223	186	191	300
PF		PALUSTRINE FOREST	6	6	9	9	9	9
PS		PALUSTRINE SHRUBLAND	1	2	2	2	2	2
PE		PALUSTRINE EMERGENT	0	0	1	1	1	1
P		PONDS	0	0	17	17	17	17
R		ROADS	28	46	46	46	46	46
		TOTAL ACRES	1285	1285	1285	1285	1285	1285

Note: Because acreage has been rounded, slight variations may occur.

MITFUTUR.WK3

5/19/94

SATSOP POWER PLANT
WILDLIFE MITIGATION MANAGEMENT SCENARIO
(CALENDAR YEARS 1994 THRU 2040)

RR – ROOT ROT PRESCRIPTION
CT – COMMERCIAL THINNING
CPL – CONIFER INTERPLANTING

FSE – FORAGE/SHRUB ENHANCEMENT
FE – FORAGE ENHANCEMENT

1993 COVER	ACRES	1994/95	1998	2001	2004	2007	2010	2013	2015 CHECK	2016	2019	2022	2025	2028	2031	2034	2037	2040	2040 HEP
		RR/CPL–1.1							C1–1.56										C2–1.56
C4–026	32.864	RR/CPL–0.46							C4–31.304										C4–31.304
C1–149	2.61								C2H, 2.610		CT								C3T–2.610
C1–147	19.873								C2H,19.873					CT					C3T–19.873
C1–003	2.18								C2H,2.18			CT							C3T–2.180
C1–145	41.989								C2H,41.989			CT							C3T–41.989
C1–004	1.511								C2H,1.511									CT	C3T–1.511
C1–091	6.934	CPL							C2–6.934				CT–5						C3T–5/C3–1.934
C1–140	8.937	CPL							C2–8.937				CT						C3T–8.937
C1–132	8.117	CPL							C2–8.117								CT		C3T–8.117
C1–129	10.352	CPL							C2–10.352								CT		C3T–10.352
C1–128	4.236	CPL							C2–4.236									CT	C3T–4.236
C1–143	1.33	CPL							C2–1.33										C3–1.33
C1–139	1.96	CPL							C2–1.96						CT				C3T–1.96
C1–133	10.613	CPL							C2–10.613						CT				C3T–10.613
C1–064	5.286	CPL							C2–5.286						CT				C3T–5.286
C1–086	2.045	CPL							C2–2.045				CT						C3T–2.045
C1–085	1.014	CPL							C2–1.014				CT						C3T–1.014
C1–142	3.373	CPL							C2–3.373								CT		C3T–3.373
C1–141	11.991								C2–11.991								CT		C3T–11.991
B–095	8.208	FSE		FSE		FSE		FSE	B–8.208		FSE		FSE		FSE		FSE		B–8.208
B–106	3.411	FSE		FSE		FSE		FSE	B–3.411		FSE		FSE		FSE		FSE		B–3.411
B–096	4.707	FSE		FSE		FSE		FSE	B–4.707		FSE		FSE		FSE		FSE		B–4.707
G–093	9.56	FE	FE	FE	FE	FE	FE	FE	G–9.56	FE	FE	FE	FE	FE	FE	FE	FE	FE	G–9.56

Table 2

SATSOP POWER PLANT SITE
WILDLIFE MITIGATION PLAN

APPENDIX A

SEED MIXTURE

Seeding Mixture for Clear-Cut Areas

Species	Pounds/acre
Perrennial rye grass	2.0
Annual rye grass	2.0
Orchard grass (drawf if available)	4.0
Tall fescue	1.0
Yellow sweet clover	4.0
Red (white Dutch or subterreanean) clover	2.0
Birdsfoot trefoil	5.0
TOTAL	20.0 pounds/acre

Shaded Mix

Species	Pounds/acre
Fine fescue	17.0
Big trefoil	2.0
Annual rye grass	1.0
White Dutch or subterreanean clover	2.0
TOTAL	22.0 pounds/acre

SATSOP POWER PLANT SITE
WILDLIFE MITIGATION PLAN

APPENDIX B

PERIPHERAL LANDS AGREEMENT

AGREEMENT ON MANAGEMENT FOR WILDLIFE MITIGATION ON PERIPHERAL SATSOP SITE PROPERTIES BETWEEN THE STATE OF WASHINGTON DEPARTMENT OF WILDLIFE AND THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM

I. INTRODUCTION

The Wildlife Mitigation Plan, Rev. 0, as approved by Energy Facility Site Evaluation Council (EFSEC) Resolution No. 254, dated August 13, 1990, requires the performance of a Habitat Evaluation Procedure (HEP) analysis of the Satsop Power Plant site to determine what impacts construction, preservation, and future operation of the project will have on wildlife, and to develop, if necessary, wildlife enhancement measures needed to offset wildlife impacts. In addition, the Wildlife Mitigation Plan specified that: 1) when feasible the island portion of the Ranney Well field would be transferred to the Washington Department of Wildlife (WDW); 2) that the HEP would address the impacts of Army Corps of Engineer permitted activities; and, 3) the mitigation credits for on going activities at the raw water well field would be determined.

The Satsop HEP analysis has been initiated and is in the process of completion for most of the Satsop site. In the course of working on the HEP, the HEP team, consisting of representatives of the Washington Public Power Supply System (Supply System) and WDW, determined that it was in the best interests of the HEP process to provide a separate management plan for properties found separate and not joined to the Satsop core area, and exclude them from further HEP analysis. These **Peripheral Lands** include the lands where Army Corps of Engineer permitted activities have occurred and the raw water well field. Attachment I provides a listing of the peripheral properties and a description of the impacts, including acreage.

The Parties enter into this Agreement to identify the commitments and obligations of the Parties with respect to wildlife mitigation on the peripheral lands. The Parties recognize that this agreement modifies the obligations and commitments made in the Wildlife Mitigation Plan, Rev. 0, with respect to the Ranney Well field Island and the raw (potable) water well field. Nothing in this Agreement shall affect the prior obligations and commitments of the Parties with respect to lands not identified herein as the peripheral lands.

The objective of this separate management plan is to recognize the permanent loss of 32 acres of habitat, and to set aside the available 279 acres of disjointed parcels (138 acres of which were altered) to allow for the preservation of riparian, wetland and mature/old growth forest habitats.

II. PERIPHERAL LANDS

The peripheral lands are defined as those Satsop Power Plant lands that will not be assessed under the ongoing HEP, as agreed to by the HEP team. The peripheral lands are specifically identified in Attachment I, Satsop Power Plant Impact Assessment on Peripheral Properties, and Attachment II, site map, both of which are incorporated fully by reference.

A. Wildlife and Habitat Mitigation.

The Supply System and WDW agree that the peripheral properties will be managed by the Supply System as follows.

1. The Supply System will set aside 279 acres as described in Attachments I and II for wildlife mitigation purposes. In the event that proposed future plant requirements and activities might impact these lands, the Supply System and WDW will consult to ensure that wildlife mitigation benefits are maintained. Passive management, as described in section II.B, will be utilized in these areas:

Raw Water Well Field

Graham Parcel

Barge Unloading Facility (BUF)

Ranney Well Field

Ranney Well Field Island

NSSS Haul Road and Spoils Areas

2. Because of river course changes of the Chehalis River the Ranney Well field island is on the north side of the river and adjoining to WDW lands. WDW will be allowed to perform land management activity (farming for wildlife) such as is practiced on the adjoining WDW lands.

B. Peripheral Land Maintenance Activities

While this agreement acknowledges preservation as the preferred management option, the Supply System shall perform, as necessary, the following maintenance activities on peripheral lands:

a) road maintenance, including but not limited to: grading, ditching, and road repairs;

b) weed control, including use of pesticides in accordance with United States Environmental Protection Agency and Washington State Department of Agriculture requirements. Generally, spot spraying is the preferred treatment when pesticide application is necessary. The Supply System shall provide proper training and appropriate supervision of employees or contractors to ensure that only targeted vegetation is sprayed;

c) erosion control, including but not limited to: slope repair, removal of eroded material, ditch maintenance, culvert maintenance, Hyatt Creek dam maintenance, and vegetation planting to assist in erosion control;

d) maintenance of the electrical control building, Ranney Wells, bioassay facility, pipelines, electrical conduit and systems associated with plant operations. This includes all normal servicing, provisioning, and related activities associated with the preservation, continued construction, or operation of the power plant;.

e) bank protection repairs covered under existing Army Corps of Engineer permits;

f) protection of the peripheral wildlife mitigation lands from fire, theft, and vandalism;

g) restriction of off road travel on the peripheral properties used for wildlife mitigation; and

h) placement of signs indicating management for wildlife benefits on the peripheral properties, similar to signs presently used on the Supply System properties for wildlife trees and preservation areas. The signs will be developed in conjunction with the WDW.

C. Wildlife Management Plans

Active wildlife management project proposals may be recommended by either party for any of the listed peripheral properties and put into place upon written concurrence of both parties. Nothing in this agreement precludes the Supply System or the Department of Wildlife from proposing the peripheral properties for enhancements.

III. RAW WATER WELL FIELD

On February 12, 1979 WDW and the Supply System entered into an agreement for the eventual transfer of the raw water well fields property to WDW. The wildlife mitigation plan acknowledged that agreement and left for consideration the benefits of returning management responsibilities to the Supply System. WDW agrees to void that previous agreement and return management of the property to the Supply System under the terms of this agreement.

IV. MISCELLANEOUS

A. Terms of Agreement

This Agreement becomes effective on the date of last signature and continues in force throughout the period of the Site Certification Agreement for Nuclear Projects No. 3 and No. 5 between the State of Washington and the Washington Public Power Supply System, dated October 27, 1976.

B. Modifications to Agreements

Modifications to this agreement may be recommended by either party and put into place upon written concurrence of both parties.

C. Dispute Resolution

It is anticipated that any dispute that arises under this agreement will be resolved by the respective staffs working directly on this matter. Should that not be possible, disputes shall be elevated through the respective chain-of-command up to the Director of Wildlife and the WNP-3/5 Site Manager. In the unlikely event that a dispute should remain unresolved through this process, either party may submit the dispute to the Energy Facility Site Evaluation Council (EFSEC) for resolution.

D. Waiver of Default

Any waiver at any time by any Party hereto of any right with respect to any other Party with respect to any matter arising in connection with this agreement shall not be considered a waiver with respect to any subsequent default or waiver.

E. Assignment

This agreement shall be binding on all successors or assignees.

Signature

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Charles Butros — 11/11/93

By C.M. Butros, WNP-3/5 Site Manager — Date

WASHINGTON DEPARTMENT OF WILDLIFE

Curt Smitch — 10/29/93

By Curt Smitch, Director — Date

SATSOP POWER PLANT
IMPACT ASSESSMENT ON PERIPHERAL PROPERTIES

ATTACHMENT I

HISTORICAL DESCRIPTION	(acres)	HABITAT BEFORE IMPACT	(acres)	IMPACT	(acres)	(year)	CURRENT HABITAT	(acres)	HABITAT LOST (acres)
Raw Water Well Field	49	Palustrine Forest	34	Developed Well/Road	1	1977	Palustrine Forest	34	1
		Barren	5				Palustrine Emergent	9	
		Grass	10				Barren	4	
							Developed	1	
							Scrub Shrub	1	
Graham (land use as farm)	22	Palustrine Emergent	7	No Impact			Palustrine Emergent	7	0
		Palustrine Forest	2				Palustrine Forest	2	
		Hardwood Sapling	2				Hardwood Sapling	2	
		Grass	11				Grass	11	
Barge Unloading Facility (BUF)	20	Palustrine Emergent	4	Construction impacted approx. 60% of habitat:		1980-81	Palustrine Emergent	1	5
		Grass	15				Pond	4	
		Developed/Road	1	Barge slip	4		Developed	6	
				Access road	1		Grass	8	
				Additional habitat modified	6		Hardwood Forest	1	
NSSS Haul Road and Spoils Areas	159	Conifer Unthinned	36	Current mature stands (29 acres) not impacted.			Developed/Road	18	14
		Mixed Forest	36	Brush along BPA corridor (19 acres) not impacted.			Palustrine Forest	3	
		Brush	19	Hyatt Ponds and Dam constructed.		1980	Palustrine Emergent	3	
		Palustrine Shrub	13	NSSS Haul Road (50', 3 mi) constructed.		1979-81	Mixed Forest	19	
		Hardwood	36	Elizabeth Creek relocated.		1977	Grass	23	
		Palustrine Emergent	15	Spoil areas (13 acres) developed:			Hardwood Sapling	46	
		Developed/Road	4	Elizabeth		1979-80	Brush	24	
				Hyatt		1980	Ponds	16	
				Weyco		1980-81	Conifer Unthinned	7	
				Total acres modified:	107				
Elma Visitor's Center	4	Parking Lot, Gravel Pit Building	3	No Impact			Parking Lot, Gravel Pit Building	3	0
		Screening Vegetation	1				Screening Vegetation	1	
Ranney Well Field Island	8	Palustrine Forest	8	No Impact			Palustrine Forest	8	0

SAT: ER PLANT ATT. 1
IMPAC ESSMENT ON PERIPHERAL PROPERTIES

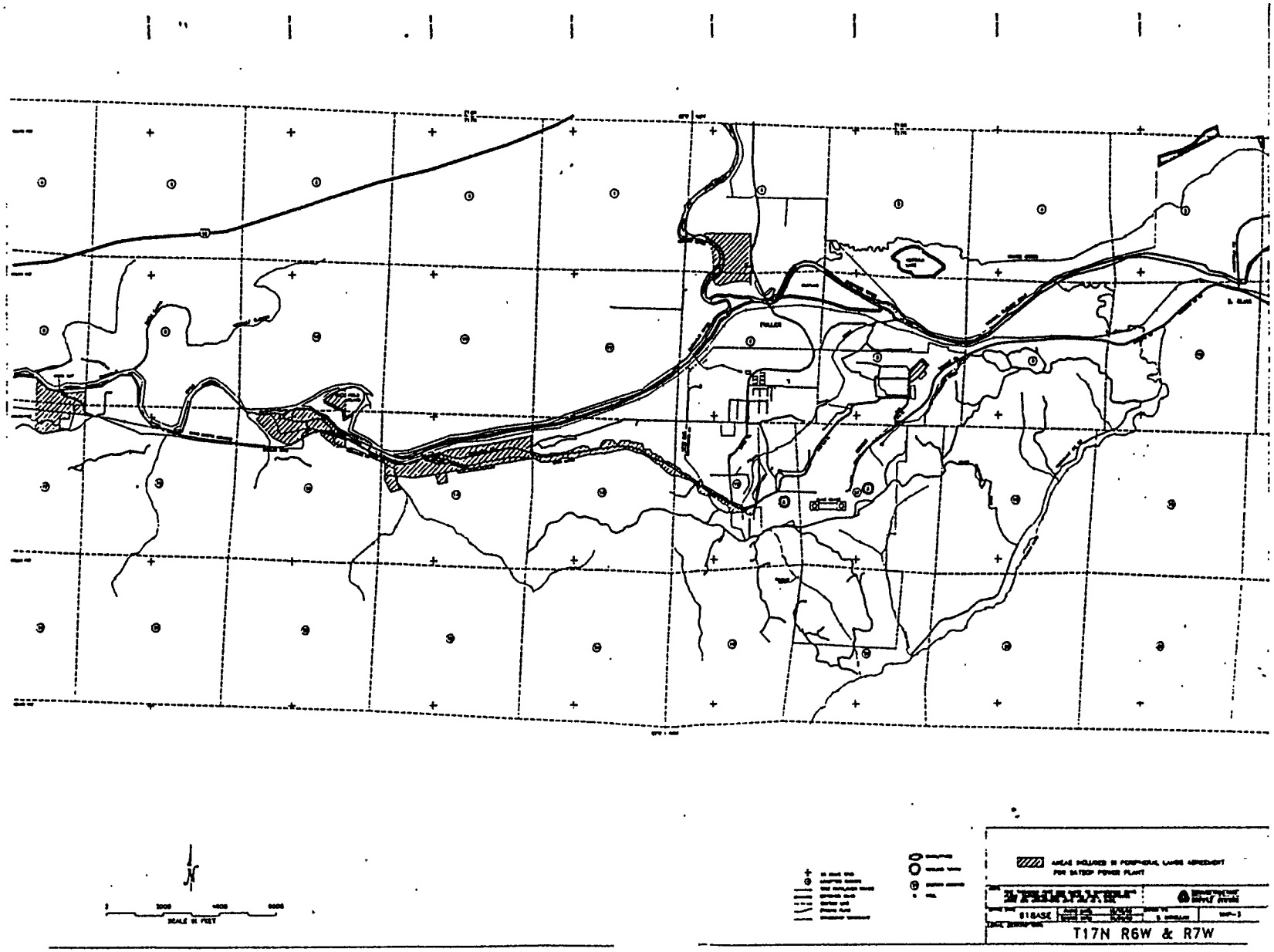
HISTORICAL DESCRIPTION	(acres)	HABITAT BEFORE IMPACT	(acres)	IMPACT	(acres)	(year)	CURRENT HABITAT	(acres)	HABITAT LOST (acres)
Ranney Well Field (land use as potato farm)	48	Agricultural Palustrine Emergent Scrub Shrub	29 12 7	All areas were impacted by construction except scrub shrub around Elizabeth Creek. Construction activities were: Wells and electrical control bldg. Bank protection Access road (40', 1/2 mi) and bank protection Total acres modified:	 41	 1981 1980 1983	Developed/Road Palustrine Forest Palustrine Emergent Scrub Shrub Grass Hardwood Sapling	3 3 3 13 24 2	3
Minkler Road Upgrade	3	Grass Hardwood Forest	2 1	Assumed road widened by 20'; right-of-way impacted	2	1980-81	Grass Hardwood Forest Developed/Road	1 1 1	1
East Access Road	39	Mixed Forest Clearcut Hardwood Grass	16 8 12 3	Workman Creek relocated. Excavated for road.	 8	1977 1977-78	Developed/Road Grass Mixed Forest Hardwood Sapling	8 12 4 15	8

TOTAL PROPERTY RETAINED BY SUPPLY SYSTEM:	310	PREVIOUSLY DEVELOPED ACRES IN USE:	8	SS RETAINED DEVELOPED AREAS:	32
TOTAL PROPERTY TRANSFERRED TO GRAYS HARBOR COUNTY:	42	WILDLIFE HABITAT MODIFIED:	138	TOTAL SS AVAILABE TO WILDLIFE:	279
TOTAL PERIPHERAL AREA:	352	TOTAL ACRES PRESERVED:	174	TOTAL SS RETAINED PROPERTY:	310
		TOTAL HABITAT LOST:	32		
		TOTAL PERIPHERAL AREA:	352		

NOTES:
Habitats before impact were estimated from aerial photographs and 1976 cover type map. Impacts to habitats occurred from conversion to other habitat types or through permanent loss such as roads and buildings. Current habitats were estimated using 1991 aerial photographs and 1991 cover type map. Conversion to totat acres habitat lost was determined by estimating the area of roads or other types of impacts. Road acreages were determined by measuring the length and average width of road, calculating total square feet and converting to acres.

Acres listed for Minkler Road Upgrade and the East Access Road were transferred to Grays Harbor County, or an easement was provided to the County, such that the Supply System has no effective control over road maintenance activities.

Overall results of this assessment on peripheral areas showed that of the total 352 acres, 174 acres had been preserved, 138 acres had been modified by construction activities, 8 acres previously developed remained in use, and 32 acres of habitat had been permanently lost. Total acreage on peripheral areas may be affected by changes in river course.



T17N R6W & R7W

SATSOP POWER PLANT

HABITAT EVALUATION PROCEDURE
IMPACT ASSESSMENT

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

JUNE 28, 1994

SATSOP POWER PLANT
HABITAT EVALUATION PROCEDURE
IMPACT ASSESSMENT

Introduction

The Satsop Power Plant Wildlife Mitigation Plan, Revision O dated May 29, 1990, required the completion of a Habitat Evaluation Procedure (HEP) analysis to determine what impacts construction, preservation and operation of WNP-3 and WNP-5 have on wildlife, and to develop, if necessary, wildlife enhancement and mitigation measures needed to offset wildlife losses.

Following are the final HEP results for the five indicator species used to evaluate wildlife habitat impact assessment of the Satsop site and four mitigation alternatives. All mitigation alternatives provide significant mitigation by preserving the existing high quality mature forests that exist on Satsop site lands. None of the mitigation alternatives reviewed provide for full compensation of wildlife habitat losses.

Alternative #1, the active mitigation plan, proposes the highest amount of timber harvest of the four alternatives reviewed.

The two Passive Mitigation alternatives are variations of a stewardship management strategy approved by Washington Department of Fish and Wildlife (WDFW) and the Supply System for the Satsop site "Peripheral Lands."

Alternative #4 is WDFW's and the Supply System's favored alternative.

Accompanying the HEP analysis is a summary of the various mitigation alternatives. Comparisons are made between the Supply System's active mitigation plan alternative and the other three alternatives.

Impact Assessment

The impact assessment was based on a comparison of the Without site habitat conditions to the With site/Without Mitigation habitat conditions. Both evaluations assume that the lands would be managed under a combined commercial timber management and small land owner scenario. The difference between these two conditions is the loss assessment, which is summarized in column one of Table 1.

All indicator species showed significant habitat losses. Southern-red-backed vole (mid-late successional coniferous forest indicator species) showed the largest loss (-201.32 AAHU's). This was caused by the permanent loss of commercial forest lands to the development of the Satsop site facilities. These lands would have been maintained in second growth coniferous plantations, which would have provided near optimum habitat conditions for the vole.

Black-tailed deer (multi-cover type indicator species) impacts (-139.88 AAHU's) are related to the permanent loss of habitat to the development of Satsop site facilities and increased human

disturbances. Development of the Satsop site doubled road densities, reduced access to habitats and fragmented the blocks of remaining habitat.

Cavity nesting and mature forest species impacts (-99.20 AAHU's) as measured by the pileated woodpecker model were significant. Impacts are associated with the permanent loss of forest habitat.

Rufous-sided towhee (shrubland indicator species) impacts (-64.36 AAHU's) were related to the loss of the amount of forest habitat that would have been clear cut during future commercial forest management activities. Early succession forests provide good towhee habitat.

Though estimated the least impacted, Cooper's hawk habitat (mature deciduous and mixed forests) losses were significant (-54.02 AAHU's). Impacts were related to the permanent loss of forest habitat. Large amounts of high quality Cooper's hawk habitat existed on the Satsop site prior to the projects starting. The Without site and the With site/Without Mitigation habitat conditions predicted the eventual project unrelated commercial harvest of mature deciduous and mixed forests. This combined with the future conversion to coniferous forest plantations significantly reduced the estimated future quantity and quality of Cooper's hawk habitat.

Table 1. Summary of Average Annual Habitat Units (AAHU's) produced from the Satsop site HEP impact loss assessment and the four mitigation alternatives.

	AAHU's				
Indicator Species	**Impact Loss**	**Alt. #1 Gain**	**Alt. #2 Gain**	**Alt. #3 Gain**	**Alt. #4 Gain**
Rufous-sided Towhee	-64.36	-69.55	-80.29	-76.93	-76.83
Cooper's Hawk	-54.02	312.77	333.32	352.21	333.63
Southern Red-backed Vole	-201.32	5.38	.23	-17.07	1.56
Pileated Woodpecker	-99.20	67.87	70.13	67.84	82.27
Black-tailed Deer	-139.88	16.77	64.21	58.28	67.28

Mitigation Assessment

All mitigation alternatives considered provide significant mitigation credit from the retention and preservation of high quality mature coniferous, deciduous and mixed deciduous forests habitats existing on the Satsop site. These forest habitats provide near maximum habitat quality benefits for their respective indicator species.

In addition, all mitigation alternatives considered included mitigation activities conducted from 1988-1993. There has been considerable management activities on the site lands. These activities are summarized in Table 2.

Table 2. Summary of Interim Mitigation Activities.

Interim Mitigation Activity	Acres	Year
Mature Conifer Forest Commercial Thinning	81	1989-91
Mature Conifer Forest Clear Cut	4	1991
Mature Hardwood Forest Clear Cut	8	1990-92
Mature Mixed Forest Clear Cut	37	1990-92
Herbicide Brush Control	68	1991
Grass Field Enhancement	10	1989
Pond Maintenance	N/A	1989
Conversion of Grass to Conifer	2	1989
Conversion of Hardwood Sapling to Conifer	49	1989-91
Shrub and Herbaceous Forage Enhancements	10	1989

Benefits from the four mitigation alternatives evaluated are summarized in Table 1. All four alternatives are similar in providing most of their mitigation credit through preservation of deciduous, mixed and coniferous mature forests. No alternative provides no net loss for all indicator species. In part this is due to the type of vegetation existing on Satsop site lands. More mature deciduous and mixed forest acres are being preserved than the Without site condition; which showed the area being converted into second growth coniferous forests.

The active program would provide higher benefits to towhee by enhancing the powerline right-of-way shrub areas and converting some mature deciduous and mixed forests to early shrub successional and second growth conifer habitat.

The two passive alternatives would provide more benefits for Cooper's hawk and woodpecker by preserving the maximum amount of existing mature forests. The passive scenarios would significantly reduce human disturbances by closing an additional 4 miles of road on this 1,200 acre area.

Alternative #4 is a combination of the three other alternatives. Alternative #4 provides the highest amount of mitigation credit for wildlife species (pileated woodpecker and black-tailed deer) and habitats (mature forests as indicated by pileated woodpecker and Cooper's hawk) identified by Washington State for priority management.

Alternative #1: Active Future Mitigation Activity

The active future mitigation plan combines forage and shrub enhancement activities with conifer regeneration stand maintenance. This plan proposes some future commercial harvest of mixed and hardwood stands in combination with commercial thinning of conifer stands. Because of the prolonged management activity patterns, few roads are closed. This plan was the Supply System's proposed alternative, as summarized in Table 3.

The HEP results for Alternative #1 are contained in Table 4. Compensation up to or above what was lost is only reached for one indicator species, Cooper's hawk, the mature deciduous forest indicator species. When comparing the four alternatives (Table 1), this alternative provides the highest level of compensation for towhee (seral shrub) and vole (mid-late successional coniferous forests) and the lowest levels for Cooper's hawk (mature deciduous or mixed forests) and black-tailed deer (multi-cover types).

Table 3. Alternative #1: Proposed Active Future Mitigation Activity Summary

Activity	Acres	Year
Shrub Enhancement of BPA Right-of-Way	19	1995
Hay Field Enhancement	10	1995
Conifer Plantation Maintenance	76	1995-2015
Root Rot Control (Clear Cut Mature Conifer Forest)	2	1995
Mature Hardwood Forest Clear Cut	34	2004
Second Growth Conifer Commercial Thinning	141	2019-2040
Mature Mixed Forest Commercial Thinning (Thin Hardwoods and Inter-plant Conifer)	48	2019-2028
Roads Closed	0.8 miles	1994

Table 4. Alternative #1: Proposed Active Future Mitigation Activity

	AAHU's		
	Impact Loss	Alt Gain	Net Mitigation
Rufous-sided Towhee	-64.36	-69.55	-133.99
Cooper's Hawk	-54.02	312.77	258.68
Southern Red-backed Vole	-201.32	5.38	-195.94
Pileated Woodpecker	-99.20	67.87	-31.33
Black-tailed Deer	-139.88	16.77	-123.11

Alternative #2: Limited Future Mitigation Activity

This passive management plan alternative is based primarily on preservation of the already existing high quality mature forest habitat found on the Satsop site. This alternative was conditioned on maintenance of the conifer reforestation stands. Alternative #2 future mitigation activities are included in Table 5.

Table 5. Alternative #2: Limited Future Mitigation Activity Summary.

Activity	Acres	Year
Conifer Plantation Maintenance	76	1995-2015
Roads Closed	4.3 miles	1994

The HEP results for Alternative #2 are contained in Table 6. Compensation up to or above what was lost is again only reached for one indicator species, the Cooper's hawk. When comparing the four alternatives (Table 1), Alternative #2 provides high levels of compensation for pileated woodpecker (mature forests, large snags and trees), medium values for Cooper's hawk (mature deciduous or mixed forests), black-tailed deer (multi-cover types) and lower values for towhee (seral shrub).

Table 6. Alternative #2: Limited Future Mitigation Activity

	AAHU's		
	Impact Loss	Alt. #2 Gain	Net Mitigation
Rufous-sided Towhee	-64.36	-80.29	-144.65
Cooper's Hawk	-54.02	333.32	279.30
Southern Red-backed Vole	-201.32	.23	-201.09
Pileated Woodpecker	-99.20	70.13	-29.07
Black-tailed Deer	-139.88	64.21	-74.67

Alternative #3: Minimal Future Mitigation Activity

This is the stewardship minimal mitigation activity alternative. The only management activity planned is maintaining road closures on 4.3 miles of open road. This plan relies entirely on reducing human disturbances and the preservation of already existing high quality mature forest habitats to achieve mitigation credit.

The HEP results for Alternative #3 are contained in Table 7. Compensation up to or above what was lost is again only reached for one indicator species, the Cooper's hawk. When comparing the four alternatives (Table 1), Alternative #3 provides a high level of compensation for Cooper's hawk (mature deciduous or mixed forests), and lower values for pileated woodpecker (mature forests, large snags, and trees), vole (mid to late successional coniferous forests), black-tailed deer, and towhee (seral shrub).

Table 7. Alternative #3: Minimal Future Mitigation Activity

	AAHU's		
	Impact Loss	Alt. #3 Gain	Net Mitigation
Rufous-sided Towhee	-64.36	-76.93	-141.29
Cooper's Hawk	-54.02	352.21	298.19
Southern Red-backed Vole	-201.32	-17.07	-218.39
Pileated Woodpecker	-99.20	67.84	-31.36
Black-tailed Deer	-139.88	51.50	-88.38

Alternative #4: Combined Future Mitigation Activity

This mitigation plan combines land use activities and management strategies from Alternatives #1, #2, and #3 that produced the greatest benefit to wildlife. The combined future mitigation activity plan will enhance forage and shrub habitats, maintain conifer reforestation stands, reduce human disturbances, and allow future commercial thinnings in second growth conifer stands. Alternative #4 is summarized in Table 8.

Table 8. Alternative #4: Combined Future Mitigation Activity Summary

Activity	Acres	Year
Shrub Enhancement of BPA Right-of-Way	19	1995
Hay Field Enhancement	10	1995
Conifer Plantation Maintenance	76	1995-2015
Root Rot Control (Clear Cut Mature Conifer Forest)	2	1995
Second Growth Conifer Commercial Thinning	141	2019-2040
Roads Closed	4.3 miles	1994

The HEP results for Alternative #4 are contained in Table 9. Compensation up to or above what was lost is only reached for one indicator species, Cooper's hawk. When comparing the four alternatives (Table 1), Alternative #4 provides highest levels of compensation for black-tailed deer (multi-cover type user) and pileated woodpecker (mature forests, large snags, and large trees). High levels of habitat enhancement are also achieved for Cooper's hawk (mature deciduous forests).

Table 9. Alternative #4: Combined Future Mitigation Activity

	AAHU's		
	Impact Loss	**Alt. #4 Gain**	**Net Mitigation**
Rufous-sided Towhee	-64.36	-76.83	-141.19
Cooper's Hawk	-54.02	333.63	279.61
Southern Red-backed Vole	-201.32	1.56	-199.76
Pileated Woodpecker	-99.20	82.27	-16.93
Black-tailed Deer	-139.88	67.28	-72.60

Conclusion

Based upon a review of the data, the Satsop HEP team selected Alternative #4 as the best alternative for wildlife mitigation. Table 10 summarizes acres of habitat types for Alternative #4 for each target year.

TABLE 10. TOTAL ACRES OF HABITAT TYPES BY TARGET YEAR

HABITAT TYPE			WITHOUT PROJECT	WITH PROJECT WITH MITIGATION				
			TY 1976	TY 1978	TY 1989	BY 1993	TY 2015	TY 2040
BA		BARREN GROUND	0	226	5	5	0	0
B		BRUSH LAND	80	31	35	35	35	30
C1	0-4" DBH	CONIFER	272	0	0	144	2	0
C2	4-12" DBH	CONIFER	0	0	0	0	144	2
C3	12-20" DBH	CONIFER	9	0	0	0	0	3
C4	> 20" DBH	CONIFER	267	167	167	84	82	163
C3T	12-20" DBH	CONIFER THINNED	0	0	0	0	0	141
C4T	> 20" DBH	CONIFER THINNED	0	0	0	81	81	0
D		DEVELOPED	5	290	292	292	292	292
G		GRASS LAND	40	28	67	87	64	64
H1	0-4" DBH	HARDWOODS	3	0	145	96	0	0
H2	4-12" DBH	HARDWOODS	28	0	0	0	113	0
H3	> 12" DBH	HARDWOODS	101	104	104	97	97	210
M1	0-4" DBH	MIXED	167	162	168	99	0	0
M2	4-12" DBH	MIXED	3	0	4	4	109	5
M3	> 12" DBH	MIXED	275	223	223	186	191	300
PF		PALUSTRINE FOREST	6	6	9	9	9	9
PS		PALUSTRINE SHRUBLAND	1	2	2	2	2	2
PE		PALUSTRINE EMERGENT	0	0	1	1	1	1
P		PONDS	0	0	17	17	17	17
R		ROADS	28	46	46	46	46	46
		TOTAL ACRES	1285	1285	1285	1285	1285	1285

Note: Because acreage has been rounded, slight variations may occur.

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WILDLIFE MITIGATION PLAN

STANDARD OPERATING PROCEDURES

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1.0 INTRODUCTION

This field guide describes the Standard Operation Procedures (SOP) for the Satsop Power Plant Wildlife Mitigation Plan (WMP) through the year 2040, which covers the Habitat Evaluation Procedure (HEP) analysis period. It is a series of procedures organized by sections for implementing objectives described in the WMP.

The purpose of this guide is to describe habitat management practices in sufficient detail to permit continuation of the program by experienced foresters, biologists or technicians without additional input from the original project personnel. This will ensure the continuity of the program. The SOP may be used by Washington Department of Fish and Wildlife (WDFW) to assess compliance with the WMP. Adherence to the SOP will ensure standards of performance and serve as a planning and scheduling tool. This guide may be updated and revised by project personnel with mutual consent of WDFW during the life of the project. Revised pages will show the revision date in the lower left-hand corner. A log sheet for posting revisions and sign-off by the Supply System and WDFW will be included after the title page. The program's activities will be documented and annual progress reports will be presented to the Energy Facility Site Evaluation Council (EFSEC) with a copy to WDFW. In addition, in the first quarter of each calendar year, prior to the start of new activity, a coordination meeting will be held at the Satsop site to present a summary of the previous year's efforts as well as a description of the proposed work.

The original (master) copy of the SOP will be archived in the Supply System's Document Control. A Word Perfect (currently Release 5.0) formatted disk will be maintained by a Supply System designated employee for updates and revisions. Copies of the SOP will be distributed to appropriate project personnel, contractors and WDFW.

2.0 MANAGEMENT AREA

This SOP is for approximately 993 acres of undeveloped habitat located in the central site area, which consists of approximately 1,285 acres. The remainder of the total approximate 1,600 acres owned by the Supply System is served by a separate management agreement, *"Agreement on Management for Wildlife Mitigation on Peripheral Satsop Site Properties Between the State of Washington Department of Wildlife and the Washington Public Power Supply System"*. A copy of this agreement is provided in Appendix B of the WMP.

3.0 ADMINISTRATION

Administration deals with coordination and monitoring of activities, scheduling of activities, data maintenance and reports, and organization of information systems related to the WMP.

3.1 INFORMATION SYSTEMS

SOP — Describes practices and tasks that set standards for compliance and evaluation. The Supply System will implement the SOP and may utilize contractors with specialized expertise and equipment.

PROGRAM SCHEDULE — The Satsop Power Plant Wildlife Mitigation Management Scenario, Figure 1 of this SOP, gives a proposed schedule of activities to be performed, plus or minus three years. This schedule was also used as the agreed to futures alternative in the HEP analysis and resultant assessment.

CAD MAPS/ DATABASE — The computerized site land management maps were developed with Autocad, Release 12. These maps contain HEP analysis data, information on habitat types, prior activities and proposed activities, as well as data for planning management, geographic features and specific sites. This data will be maintained by a designated Supply System employee. Hard copies of the HEP analysis maps will be filed in the Supply System's Document Control Section at the site.

SUPPORT DATA — Hard copy files and data that augment the WMP are filed in the Supply System Document Control Section at the site. These files include HEP study field data, results and assessment, HEP meeting minutes, HEP cover type maps, original WMP, annual reports and other supporting documents.

3.2 COORDINATION AND MONITORING

Coordination will consist of annual meetings between the Supply System and WDFW held in the first quarter of each calendar year at the Satsop Site, supplemented by annual progress reports presented to EFSEC with a copy to the WDFW. Meetings will summarize previous year activities and discuss proposed activities, if any, for the coming year. Additional meetings (for optional tasks or other matters) may be scheduled as necessary at the discretion of either party.

Prior to the annual meeting, Supply System staff may perform a field review of the previous year's activities, and survey proposed work locations for the proposed year.

Prior to initiating forest harvest activity, a Forest Practices Application will be prepared using input received from WDFW staff during the annual coordination meeting. Additional monitoring may be undertaken by WDFW staff during the years selective thinning activities occur.

Habitat projections will be field checked by Supply System staff as part of the planned activities for 2015. The limited field check will be structured to provide a reasonable evaluation of the primary cover type characteristics of the central site area. Findings will be provided as part of the annual report to EFSEC.

3.3 REPORTS

Annual progress reports will be prepared by the Supply System to describe progress of the WMP. It will contain a summary of the previous year's activities, actual vs. planned tasks, results of field inspections, and will describe any exceptions or modifications to the SOP. The report will be submitted to EFSEC with a copy to the WDFW. The report may be included as a section to other annual reports required by EFSEC.

4.0 MANAGEMENT PRACTICES

Management practices are divided into the following sections.

5.0 Late Successional Forest Management
6.0 Root Rot Management
7.0 Preservation Area Management
8.0 Second Growth Coniferous Forest Management
9.0 Snag Management
10.0 Early Successional Forest Management
11.0 Forage and Shrub Enhancement of BPA Corridor
12.0 Forage Enhancement of Meteoroligical Tower Field
13.0 Pond Management
14.0 Management of Roads
15.0 Maintenance Activities

Each section of the management practices provides original WMP objectives and current management procedures.

5.0 LATE SUCCESSIONAL FOREST MANAGEMENT

5.1 OBJECTIVES

Approximately 164 acres of existing (1993) mature coniferous forest and 186 acres of mixed coniferous/deciduous forest (see Figure 2) will be managed as late successional habitat through the year 2040. The management objective for these forests is to ensure preservation of these habitats so that they will evolve and be available for wildlife species dependent on them.

5.2 PROCEDURES

1. These stands will be protected by limited road access and no harvest activity. Natural succession will be allowed to occur.

2. To reduce harrassment to wildlife and protect the habitat, where possible, existing roads providing access to these areas will be either trenched or gated and their use restricted.

3. In the event a large scale disruption of the habitat matrix due to natural causes such as fire, windthrow, major disease or insect infestation occurs, whereby 50 acres or more of land outside the boundaries of the riparian preservation areas and the peripheral lands agreement are affected, upon written concurrence of both the Supply System and WDFW, appropriate habitat management activities will be authorized to restore and/or maintain habitat objectives for the affected area. Lands inside the boundaries of the riparian preservation areas and served by the peripheral lands agreement are excluded from entry for catastrophic habitat restoration and/or habitat maintenance activities.

4. Where emergency response is required, such as in the case of forest fire, response to control the emergency will be taken with no prior concurrence from WDFW. Verbal notification of the emergency will be provided as soon as practical.

6.0 ROOT ROT CONTROL

6.1 OBJECTIVES

It is recognized that laminated root rot (Phellinus weirii) is present in nearly all the conifer stands at Satsop. Earlier inspections and surveys resulted in agreement between WDFW and the Supply System that two pockets located in habitat unit C4-026 warranted treatment in an effort to control expansion of the disease. Both pockets combined total less than two acres and are scheduled for treatment in 1994 or 1995. The objective is to control expansion of the disease thereby protecting the uninfected trees. Without aggressive treatment, the root rot centers in these stands will significantly impact a substantial portion of the stand. Large trees will continue to be killed at the edges of the root rot centers as they expand. Infected trees will fall in jackstraw fashion depending on the direction of storm winds. Due to their weakened root systems, few standing dead trees will exist for snags. A few of the dead trees may remain for wildlife if they are protected from the wind. Normally, root rot infected trees do not stand long enough to make good wildlife trees. Reforesting will occur with root rot tolerant species. Clearing the center of the pockets will produce small openings in the mature stands that should be beneficial to a variety of wildlife.

6.2 PROCEDURES

1. Root rot pockets were mapped (Figure 3) using compass, clinometer and hip chain distance measurer. Survey data was transferred to CAD maps of the habitat units. Lines and corners were flagged during the survey. The first pocket which lies almost due south of the WNP-3 cooling tower comprises an area of somewhat less than 1.1 acres. It is accessible along a preexisting skidder path and road. The second pocket lies almost due east of the WNP-3 cooling tower and southeast and adjacent to the existing road and comprises somewhat less than 0.46 acres. It is directly accessible from the road.

2. The Supply System forestry consultant and a Supply System staffperson will designate each of the trees to be cut with paint or by area flagging. All infected trees plus an additional tree with probable hidden infection one tree space toward the healthy stand will be cut.

3. Access routes will be marked with flagging.

4. The forestry consultant will prepare a Forest Practices Application for submittal to EFSEC.

5. Logging will occur during dry weather with rubber tired skidder in conjunction with a low P.S.I. track loader.

6. During logging operations, daily inspections by a designated Supply System employee will be conducted to ensure compliance with the WMP.

7. Logging residue will be scattered as large organic debris material with excess burned at the landing.

8. The areas will be reforested with western red cedar and western hemlock. Seedlings will be protected from animal damage by industry-tested protectors until they reach a height of 5 feet.

7.0 PRESERVATION AREA MANAGEMENT

7.1 OBJECTIVES

Preservation Areas encompass the major riparian areas and are composed of several habitat types (Figure 4). Fuller, Purgatory, Workman and Stein Creeks flow through these habitats. These areas will be allowed to evolve naturally. No land management/wildlife enhancement activities will be conducted, even in the event of a large scale disruption of the habitat matrix due to natural occurrences.

7.2 PROCEDURES

1. Preservation Area boundaries have been signed (see Figure 5) to assist with protection of these habitats.

8.0 SECOND GROWTH CONIFEROUS FOREST MANAGEMENT

8.1 OBJECTIVES

This section is intended toward management of approximately 76 acres that were harvested in the period between 1989 and 1992, and approximately 68 acres of conifer in the Workman Block The Supply System will manage these areas by selective thinning to improve spacing and growth capability, with a target of 140 to 150 stems per acre at maturity. Selective thinning is scheduled to take place on these areas between 2019 and 2040 (see Figure 6). Thinning operations will normally occur when the stand is between 30 and 40 years of age.

8.2 PROCEDURES

1. First Pre-cut Survey

   Before flagging the boundary of a cutting unit, a walk-through of the general area should be performed by a Supply System designated employee and consulting forester. This will determine if the proposed thinning is appropriate and if there are any additional considerations. Aerial photos, in addition to the CAD maps and inventory data, will be reviewed for additional information on the site.

   a. Measure canopy crown closure (average of 10 random plots per acre) by densiometer (or equivalent if approved by Supply System and WDFW) to ensure thinnings will result in no less than 70 percent crown closure.

   b. Determine applicability of harvest based on the following parameters:

      1) Thin to no less than 70 percent canopy crown closure (conifer).

      2) Thin to no less than 150 stems (conifer) per acre.

      3) Selection of codominant and subdominant conifer trees to 18 foot uniform spacing will result in uncut trees exceeding 12 inch minimum DBH (diameter at breast height) stand average (largest and healthiest conifers will be retained).

c. Identify special use areas or considerations (raptor nests, snags, etc.) and protect per timber marking codes, Table 8-1.

d. Determine equipment required. Stands that have favorable topography (less than 35 percent side slope and well drained soils) will have tractor-skidder equipment utilized. Stands with slopes over 35 percent will have cable/carriage equipment used for thinning operations.

e. Identify access (roads, skid trails, etc.)

f. Identify if area will benefit from interplanting of cedar and hemlock after operations.

2. Harvest Area Traverse

The proposed harvest area will be traversed along flagged boundaries by the consulting forester to provide the actual acres of harvest and boundary for inclusion into the CAD database.

3. Second Pre-Cut Survey

Once the applicability of thinning and the final boundary have been determined, a second pre-cut survey will be conducted by the consulting forester and Supply System designated employee to mark trees for thinning (see Table 8-1 for timber marking codes). The following guidelines will apply:

a. All deciduous hardwoods except cottonwood will be removed.

b. Thinnings will be designed to protect existing hemlock and cedar. In the event of high stand density (> 150 overstory stems per acre) pockets of cedar and hemlock, some thinning of these species may occur.

c. All cascara, chokecherry, elderberry, and other shrub species beneficial to wildlife where possible will be protected by flagging per Table 8-1.

d. On carriage operations, paths should be 6 to 10 feet wide, located along roads where possible, and a minimum of 200 feet apart.

e. All disturbed soil areas (skid trails, landings, etc.) will be seeded with one of the vegetative mixes described in Table 8-2 to improve forage production and aid in alder control. The consultant forester is responsible for site preparation and broadcast seeding at a rate of 20-22 lbs/acre applied before November.

f. Slash will be kept to a minimum and in no area will deposits greater than one foot deep be allowed. Slash may be scattered as large organic debris material with excess burned or chipped at the landing.

g. Snags or snag recruitment trees (if necessary to meet target of two snags per acre) will be created in clumps with Douglas-fir greater than 21 inches DBH targeted. If 21 inch DBH conifer trees are not present, the next largest diameter conifer trees available will be used. See snag SOP for methods. Existing snags will be signed (see Figure 7) by the consultant forester and protected.

h. It is recognized there may be some roadwork to occur before thinning operations on spur roads that have been closed to vehicular access. Activities will be limited as much as possible and gates will be kept closed when operations are not occurring.

4. On-Site Meeting and Forest Practices Application

An on-site meeting will be conducted with the Supply System designee, consulting forester and contract logger to assure that the SOP is understood by the logger. WDFW will be notified of the meeting and may attend if desired. The meeting will consist of a walk-through of the proposed harvest area. Upon completion of the meeting, the consulting forester is to prepare the necessary Forest Practice Application for submittal to EFSEC. Upon approval from EFSEC, the implementation process will commence.

5. Timber Harvest Inspections

During logging operations, daily inspections by the Supply System designee will be conducted to ensure compliance with the WMP or other agreed to criteria.

Two post-cut site inspections will also be conducted. The first inspection will be conducted before removal of logging equipment. This inspection will focus on ensuring all merchantable products are removed from the site and directing slash treatment procedures. A final inspection will be conducted to verify vegetative mix seeding establishment on disturbed sites, snag development (see snag SOP), and tree planting.

TABLE 8-1 TIMBER MARKING CODES

The following designations will be used to designate the work to be performed by logger:

	Designation	Meaning
a.	orange flag or tape	Retain tree, DO NOT CUT, leave tree mark in thinning
b.	Wildlife sign or red paint "W" or "S" on tree, or red flagging	Retain tree/snag, DO NOT CUT
c.	blue flagging	Road or access route
d.	pink flagging	Cut or property boundary
e.	blue paint	Tree selected for harvest
f.	Striped flagging tape	Retain shrub, DO NOT CUT

TABLE 8-2 SATSOP POWER PLANT GRASS/LEGUME SEED MIX OPTIONS

MIX FOR SHADED AREAS

Species	Pounds/Acre
Fine fescue	17.0
Big trefoil	2.0
Annual ryegrass	1.0
White dutch or subterranean clover	2.0
TOTAL	22.0 #/AC

MIX FOR OPEN AREAS

Species	Pounds/Acre
Perrennial ryegrass	2.0
Annual ryegrass	2.0
Orchard grass (dwarf if available)	4.0
Tall fescue	1.0
Yellow sweet clover	4.0
Red (white dutch or subterranean) clover	2.0
Birdsfoot trefoil	5.0
TOTAL	20.0 #/AC

9.0 SNAG MANAGEMENT

9.1 OBJECTIVES

In forests where thinnings are scheduled that contain an insufficient number of snags (averaging less than two snags > 21 inches DBH and 30 feet tall per acre), they will be artificially created. The preferred species for snag creation is Douglas fir, with a DBH of 21 inches or greater, and sufficiently tall to create a snag of at least 50 feet in height. If the preferred DBH is not present, the largest DBH conifer tree available will be used. Naturally occurring snags will be signed and protected.

9.2 PROCEDURES

Topping of conifers will be conducted preferably at time of selective thinning in order to meet minimum guideline of two snags per acre by using the following procedures:

1. If possible, Douglas fir over 21 inches DBH, or Douglas fir with largest available DBH will be chosen. Efforts will be taken to clump snags in an area protected from windthrow.

2. Crown removal will occur at approximately 50 feet by using explosives where applicable. Services will be performed by a licensed contractor with prior experience in explosive topping of trees.

3. All snags in the area will be marked with "Wildlife Tree, Please Protect" (see Figure 7).

4. Snag development, the aging and decay process, and animal use will be monitored and documented during the commercial thin assessment (first pre-cut survey), and information gathered will be added to the land management database.

10.0 EARLY SUCCESSIONAL FOREST MANAGEMENT

10.1 OBJECTIVES

Approximately 144 acres of young conifer habitat exists in 1994, which is the result of land management activities and/or natural regeneration. Planted areas will result in 300 stems of conifer per acre.

10.2 PROCEDURES

1. Interplanting of conifer may occur in 1995 on those habitats listed in the Wildlife Mitigation Management Scenario (Figure 1), to ensure at least 300 stems of conifer per acre. Ground inspections in 1994 revealed that some areas may not meet targeted stocking levels due to browse and incidental mortality.

2. Precommercial thinning will occur only if ground conditions warrant the activity. Entry for precommercial thinning may be to remove competing alder and to interplant additional conifer. Thinning should result in no less than 215 stems of conifer per acre and occur when trees are greater than 6 feet and less than 10 feet tall.

3. Herbicide treatment (backpack) may occur to control invading scotchbroom, alder or other noxious weeds.

11.0 FORAGE AND SHRUB ENHANCEMENT OF BPA CORRIDOR

11.1 OBJECTIVES

Approximately 16 acres of the BPA transmission corridor (see Figure 8) will be enhanced and maintained as browse for deer and food and cover for bird species. Enhancements will also produce a more stable successional stage of vegetation and reduce maintenance requirements. The goal is for approximately 70 percent of the area to be covered with grasses and forbs, at least 25 percent with palatable shrubs, and 5 percent with downed wood and stumps.

11.2 PROCEDURES

1. The Supply System will apply for a "Brush and Tree Agreement" with Bonneville Power Administration (BPA), which allows for a cooperative arrangement to maintain the area as long as vegetation is kept under 10 feet in height.

2. A walk-through will be conducted and management practices developed at that time. The management practices should address management objectives and discuss potential problems and special needs (e.g., slash control). Existing desired shrubs like cascara and vine maple will be marked with ribbon to let BPA know they should be left intact. BPA will continue to identify and remove danger trees as required.

3. Slash may be controlled by distribution, piling to create small habitat cover, or chipping and scattering.

4. BPA will mechanically remove invading scotchbroom and alder with equipment able to scarify the soil just prior to an available window for broadcast seeding for grass/legumes.

5. The Supply System will spot treat scotchbroom that resprouts with herbicides as needed.

6. A grass/legume mix (see Table 8-2, Page 10) will be broadcast seeded at the rate of 20 lbs/acre. An application of 12-12-12 fertilizer will also be introduced at the rate of 100 lbs/acre. Seeding and fertilization will occur only at the appropriate times - early fall (September, October) or early spring (March, April, or the first two weeks of May).

7. Shrubs will be purchased from a nursery with selected species being **elderberry**, **hazel**, **Indian plum**, **oceanspray** and **cascara**. Rooted stock that is approximately 3 feet in height is desired. If suitable size shrubs cannot be found, younger stock may be introduced in a nursery enclosure at the site until such time as they reach the desired height. The more mature shrubs have a better chance of surviving deer browse.

8. Shrubs will be planted in well distributed scattered clumps with care taken not to place them in areas required by BPA for direct access and maintenance of the transmission towers. A walk-through will be conducted to flag shrub planting areas in the fall. If required, planting sites will be prepared to reduce competition. Herbicides may be applied and the soil may be tilled.

9. Shrubs will be planted during February and March.

10. At five-year intervals, the Supply System will perform habitat maintenance in the area if inspection reveals it is required. Rejuvenation or enhancement of shrubs may occur by hand pruning. The cause of mortality within shrub clumps will be determined, practices modified if necessary, and replantings performed. Spot herbicide applications may occur to control scotchbroom or alder saplings.

12.0 FORAGE MAINTENANCE IN METEOROLOGICAL TOWER FIELD

12.1 OBJECTIVES

This approximately 9 acre area (Figure 9) received prior enhancement activities in 1989 (see WMP). It is surrounded by forestland and will be maintained as an open grass and foraging area for wildlife.

12.2 PROCEDURES

1. The field will be mowed annually.

2. Each fall 200 pounds of 10-20-20 fertilizer will be applied by broadcast spreading before September 15.

3. The area may receive spot herbicide treatment as needed to control scotchbroom and alder.

13.0 POND MANAGEMENT

13.1 OBJECTIVES

The Supply System will endeavor to operate the equalization and settling pond system so that water is maintained in the equalization pond as long as possible into the summer. Ponds that were created by past erosion control efforts along Fuller, Purgatory and Stein Creeks will be preserved. (See Figure 10.)

13.2 PROCEDURES

1. Generally, the valve remains in the closed position with no water moving from the equalization pond to the settling pond. When rainfall events cause water level in the equalization pond to rise, the valve between the ponds is opened. The valve between the ponds remains closed in the months of October, November, December and January until the equalization pond level reaches 292.0 feet or greater. During the rest of the year, the valve remains closed until the pond level reaches 293.0 feet or greater. The Equalization and Settling Pond Status Log from 1983 to-date indicates that the equalization pond level has not been above 292 feet from May through September. A review of the status log shows that since implementing the WMP, Rev. 0, in 1990, water transfer was not necessary from March to November.

2. Dam structures along creek ponds will be retained with removal of undesirable vegetation and debris.

14.0 MANAGEMENT OF ROADS

14.1 OBJECTIVES

The Supply System will maintain a road system with restricted access at the site to protect its wildlife population from human harrassment. Section 12.1 of the WMP describes criteria for "open and closed" roads as it applies to the site.

14.2 PROCEDURES

The Supply System will maintain current gated roads and will add gates, barricades, or trenches to roads as seen in Figure 11. Work will be performed in Fiscal Year 1995. The following roads are considered closed:

1. spur line east of cooling tower 3
2. spur line southwest of the BPA right-of-way accessing mature conifer sites
3. short spur line west of the equalization pond and spur line around the equalization pond
4. spur lines where the blowdown line crosses Fuller Creek
5. meteorological tower field access road beyond house
6. spur line access to the blowdown line by the Chehalis River
7. Workman Block road
8. short spur line in the southwest corner of the Workman Block

15.0 MAINTENANCE ACTIVITIES

The Supply System shall perform, as necessary, the maintenance activities outlined in Section 10.0 of the WMP. They are as follows:

- Road maintnenance, including but not limited to, grading, ditching, repairs, seeding, and obstruction tree removal.

- Weed control, including use of pesticides in accordance with U.S. Environmental Protection Agency and Washington State Department of Agriculture requirements. Generally, spot spraying is the preferred treatment when pesticide application is necessary. The Supply System shall provide proper training and appropriate supervision of employees or contractors to ensure that only targeted vegetation is sprayed.

- Erosion control, including but not limited to, slope repair, removal of eroded material, ditch maintenance, culvert maintenance, and vegetation planting.

- Maintenance of existing pipelines, electrical conduit and systems, including right-of-ways associated with plant operations. This includes all normal servicing, provisioning and related activities associated with the preservation, continued construction or operation of Satsop facilities.

- Protection from fire, theft, trespass and vandalism.

- Mountain beaver population may be controlled, generally by trapping.

- Placement of signs as appropriate, including but not limited to, signs indicating management for wildlife benefits, no hunting, gate approach warnings, and no forest product removal.

- Upon written concurrence of both the Supply System and WDFW, appropriate habitat management activities will be authorized to restore and/or maintain habitat objectives for an area affected by large scale disruption such as by fire, windthrow, major disease or insect infestation whereby 50 acres or more are involved. This does not apply to areas within riparian preservation areas or peripheral lands agreement boundaries.

- Where emergency response is required, such as in the case of forest fire, efforts to control the emergency will be taken with no prior concurrence from WDFW. Verbal notification of the emergency will be provided as soon as practical.

SOPFIG1WK3

5/19/94

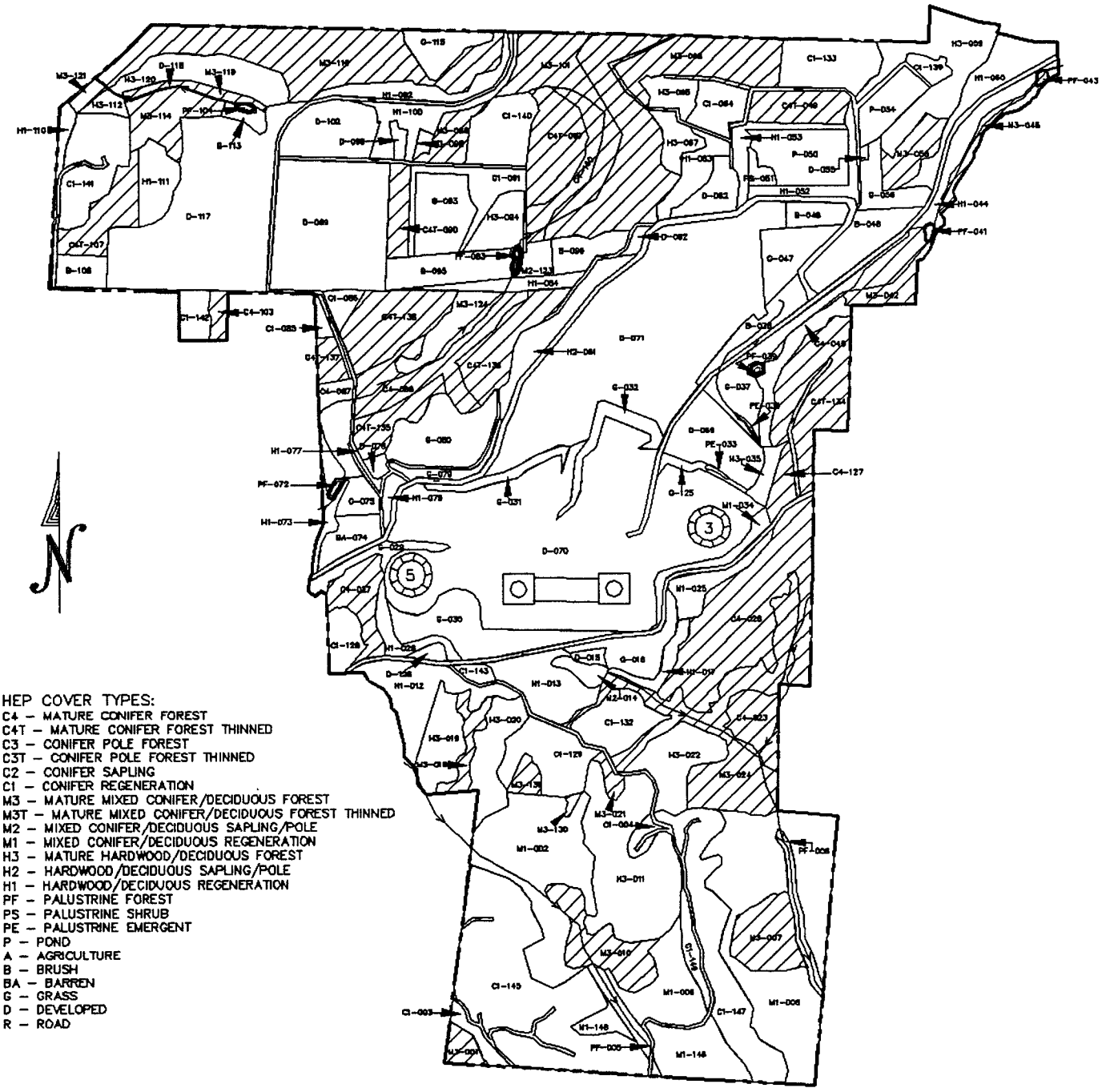
FIGURE 1

SATSOP POWER PLANT
WILDLIFE MITIGATION MANAGEMENT SCENARIO
(CALENDAR YEARS 1994 THRU 2040)

RR – ROOT ROT PRESCRIPTION
CT – COMMERCIAL THINNING
CPL – CONIFER INTERPLANTING

FSE – FORAGE/SHRUB ENHANCEMENT
FE – FORAGE ENHANCEMENT

1993 COVER	ACRES	1994/95	1998	2001	2004	2007	2010	2013	2015 CHECK	2016	2019	2022	2025	2028	2031	2034	2037	2040	2040 HEP
		RR/CPL–1.1							C1–1.56										C2–1.56
C4–026	32.864	RR/CPL–0.46							C4–31.304										C4–31.304
C1–149	2.61								C2H, 2.610		CT								C3T–2.610
C1–147	19.873								C2H,19.873					CT					C3T–19.873
C1–003	2.18								C2H,2.18			CT							C3T–2.180
C1–145	41.989								C2H,41.989			CT							C3T–41.989
C1–004	1.511								C2H,1.511									CT	C3T–1.511
C1–091	6.934	CPL							C2–6.934				CT–5						C3T–5/C3–1.934
C1–140	8.937	CPL							C2–8.937				CT						C3T–8.937
C1–132	8.117	CPL							C2–8.117								CT		C3T–8.117
C1–129	10.352	CPL							C2–10.352								CT		C3T–10.352
C1–128	4.236	CPL							C2–4.236									CT	C3T–4.236
C1–143	1.33	CPL							C2–1.33										C3–1.33
C1–139	1.96	CPL							C2–1.96						CT				C3T–1.96
C1–133	10.613	CPL							C2–10.613						CT				C3T–10.613
C1–064	5.286	CPL							C2–5.286						CT				C3T–5.286
C1–086	2.045	CPL							C2–2.045				CT						C3T–2.045
C1–085	1.014	CPL							C2–1.014				CT						C3T–1.014
C1–142	3.373	CPL							C2–3.373								CT		C3T–3.373
C1–141	11.991								C2–11.991								CT		C3T–11.991
B–095	8.208	FSE		FSE		FSE		FSE	B–8.208		FSE		FSE		FSE		FSE		B–8.208
B–106	3.411	FSE		FSE		FSE		FSE	B–3.411		FSE		FSE		FSE		FSE		B–3.411
B–096	4.707	FSE		FSE		FSE		FSE	B–4.707		FSE		FSE		FSE		FSE		B–4.707
G–093	9.56	FE	FE	FE	FE	FE	FE	FE	G–9.56	FE	FE	FE	FE	FE	FE	FE	FE	FE	G–9.56



HEP COVER TYPES:
C4 – MATURE CONIFER FOREST
C4T – MATURE CONIFER FOREST THINNED
C3 – CONIFER POLE FOREST
C3T – CONIFER POLE FOREST THINNED
C2 – CONIFER SAPLING
C1 – CONIFER REGENERATION
M3 – MATURE MIXED CONIFER/DECIDUOUS FOREST
M3T – MATURE MIXED CONIFER/DECIDUOUS FOREST THINNED
M2 – MIXED CONIFER/DECIDUOUS SAPLING/POLE
M1 – MIXED CONIFER/DECIDUOUS REGENERATION
H3 – MATURE HARDWOOD/DECIDUOUS FOREST
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H1 – HARDWOOD/DECIDUOUS REGENERATION
PF – PALUSTRINE FOREST
PS – PALUSTRINE SHRUB
PE – PALUSTRINE EMERGENT
P – POND
A – AGRICULTURE
B – BRUSH
BA – BARREN
G – GRASS
D – DEVELOPED
R – ROAD

MATURE CONIFEROUS AND MIXED CONIFEROUS/DECIDUOUS FORESTS

FIGURE 2

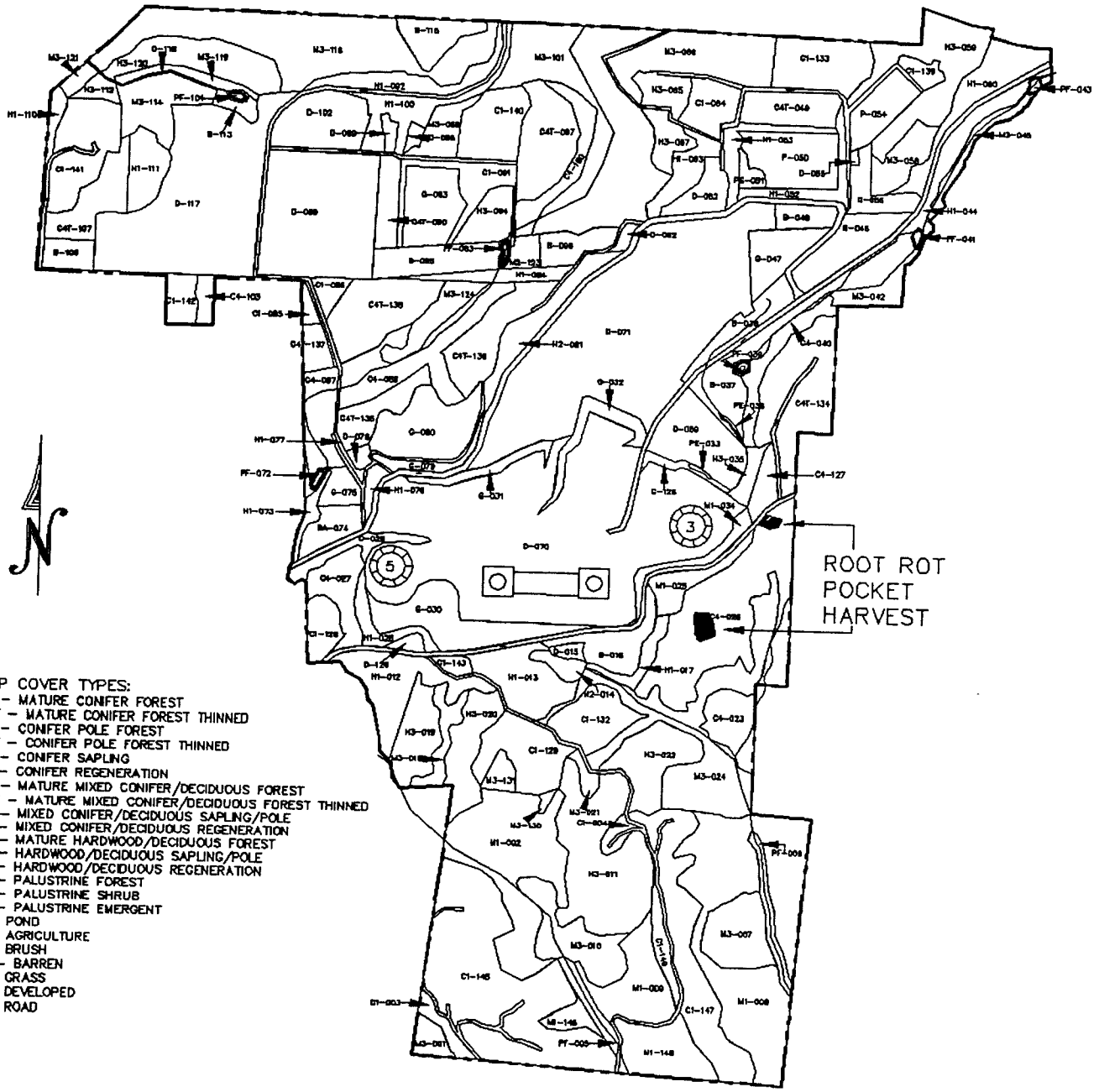
ROOT ROT
POCKET
HARVEST
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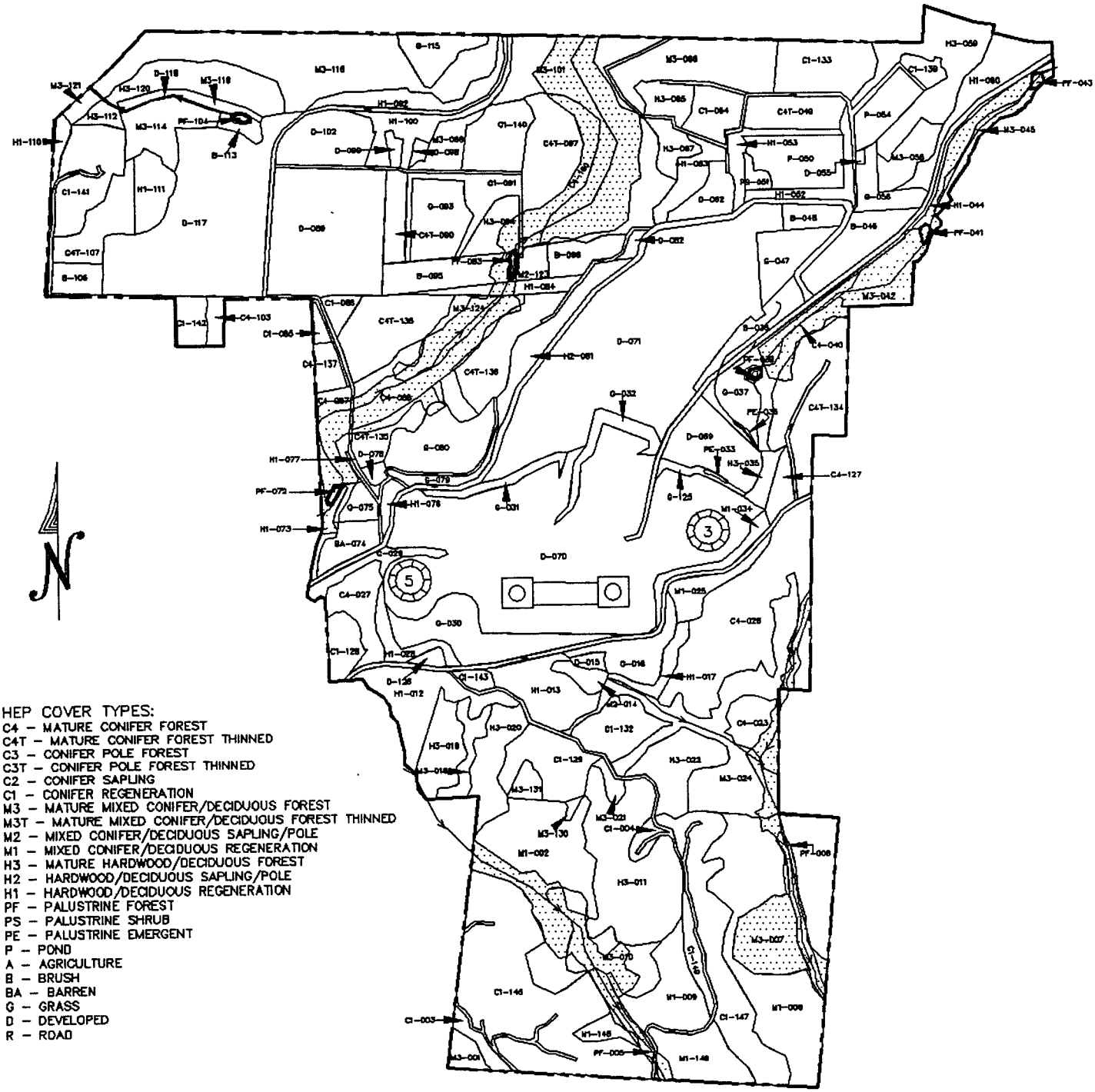
FIGURE 3



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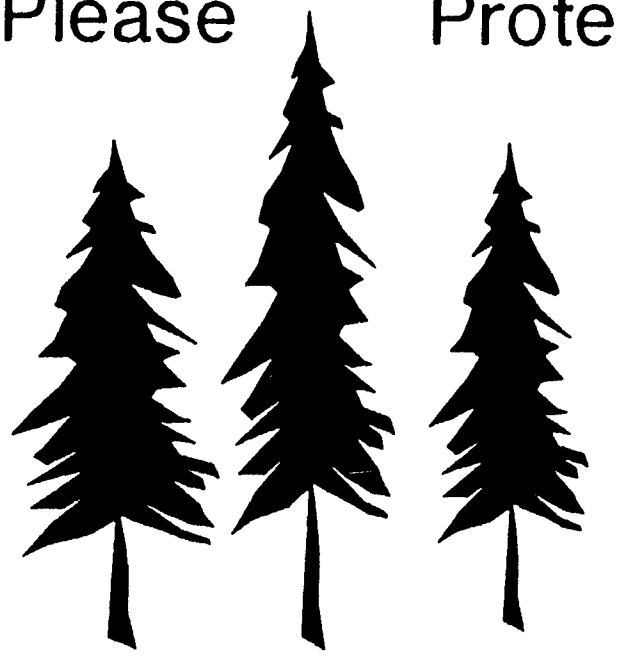
PRESERVATION AREA

FIGURE 4

PRESERVATION AREA

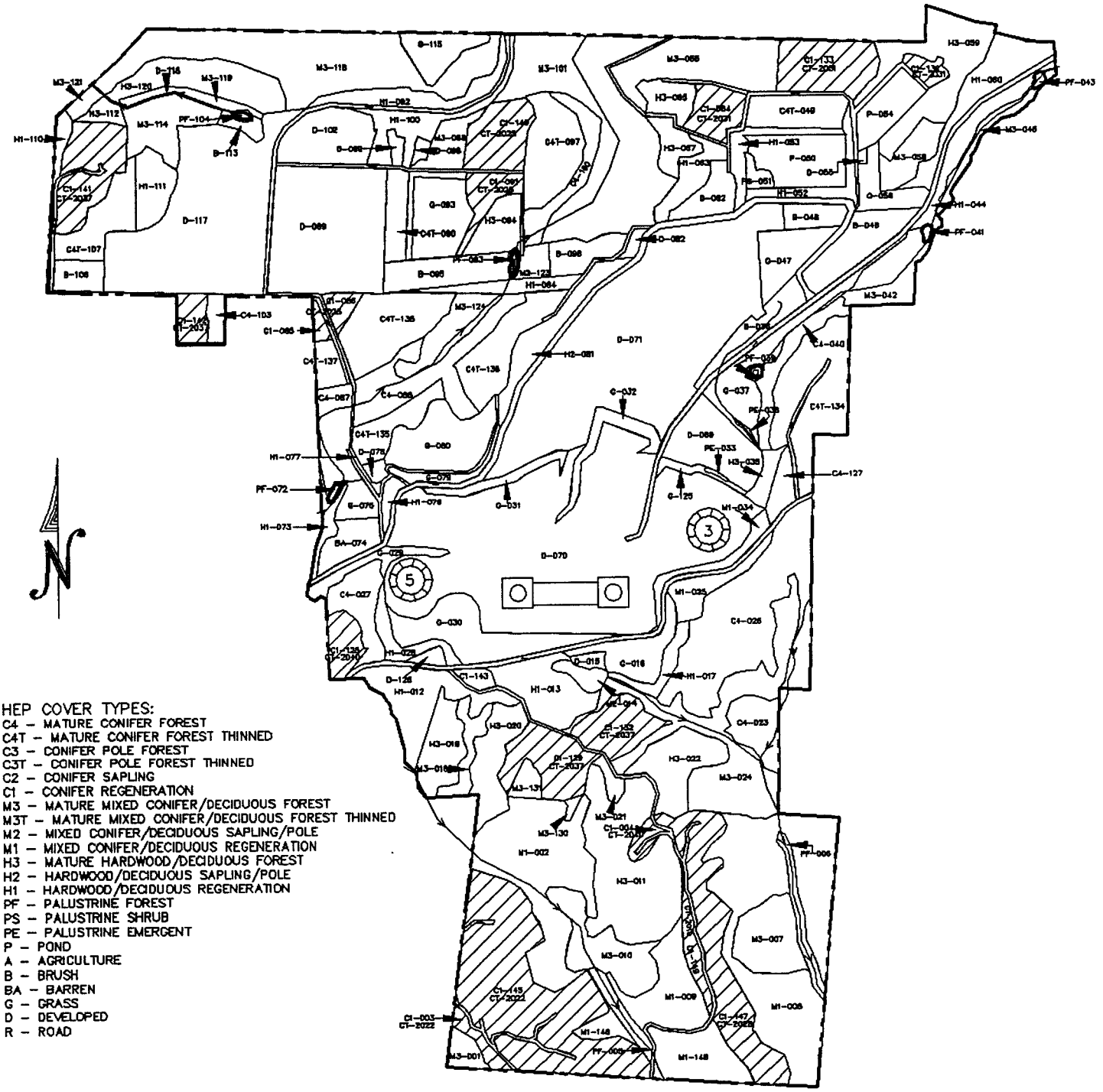
Please Protect!



WASHINGTON PUBLIC POWER
SUPPLY SYSTEM

P-459

J. L. DARLING CORP
TACOMA WA 98421



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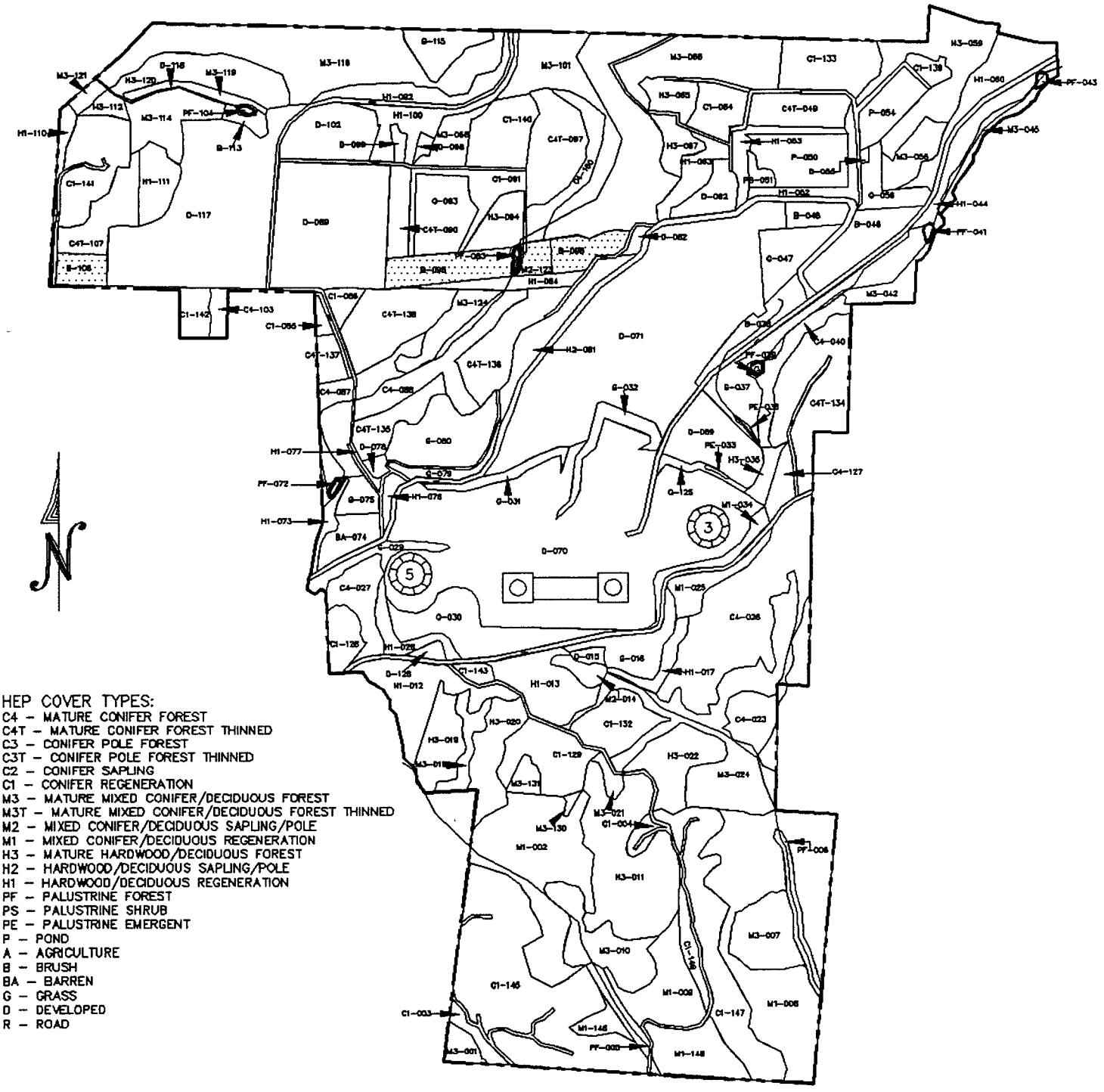
SECOND GROWTH CONIFEROUS FOREST MGMT & PROPOSED YEAR OF ACTIVITY

CT – COMMERCIAL THIN

FIGURE 6


WILDLIFE TREE
Please
Protect!
WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
P-458
J L DARLING CORP
TACOMA WA 98421

FIGURE 7



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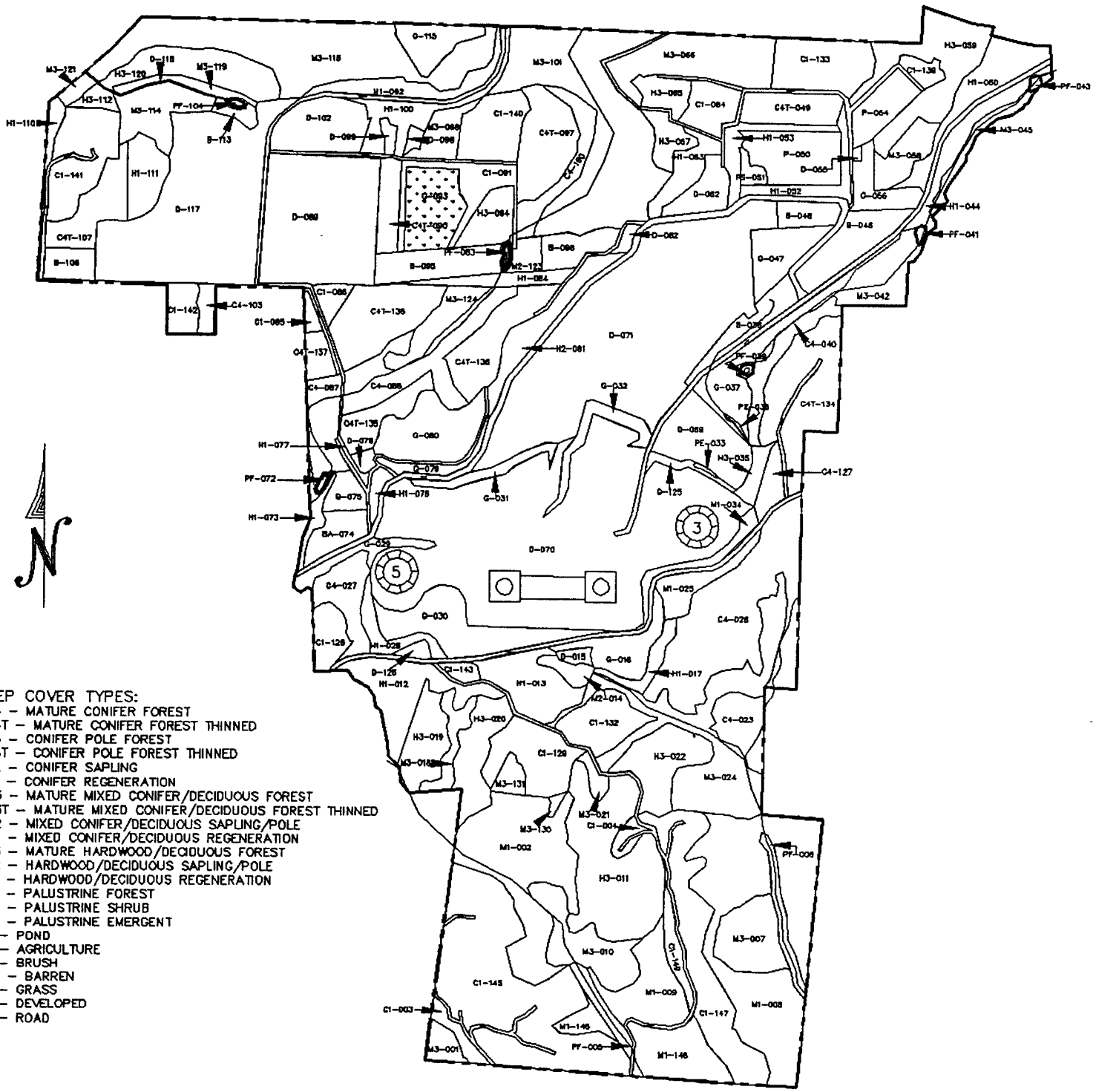
FORAGE & SHRUB ENHANCEMENT
OF BPA CORRIDOR AREAS

FIGURE 8



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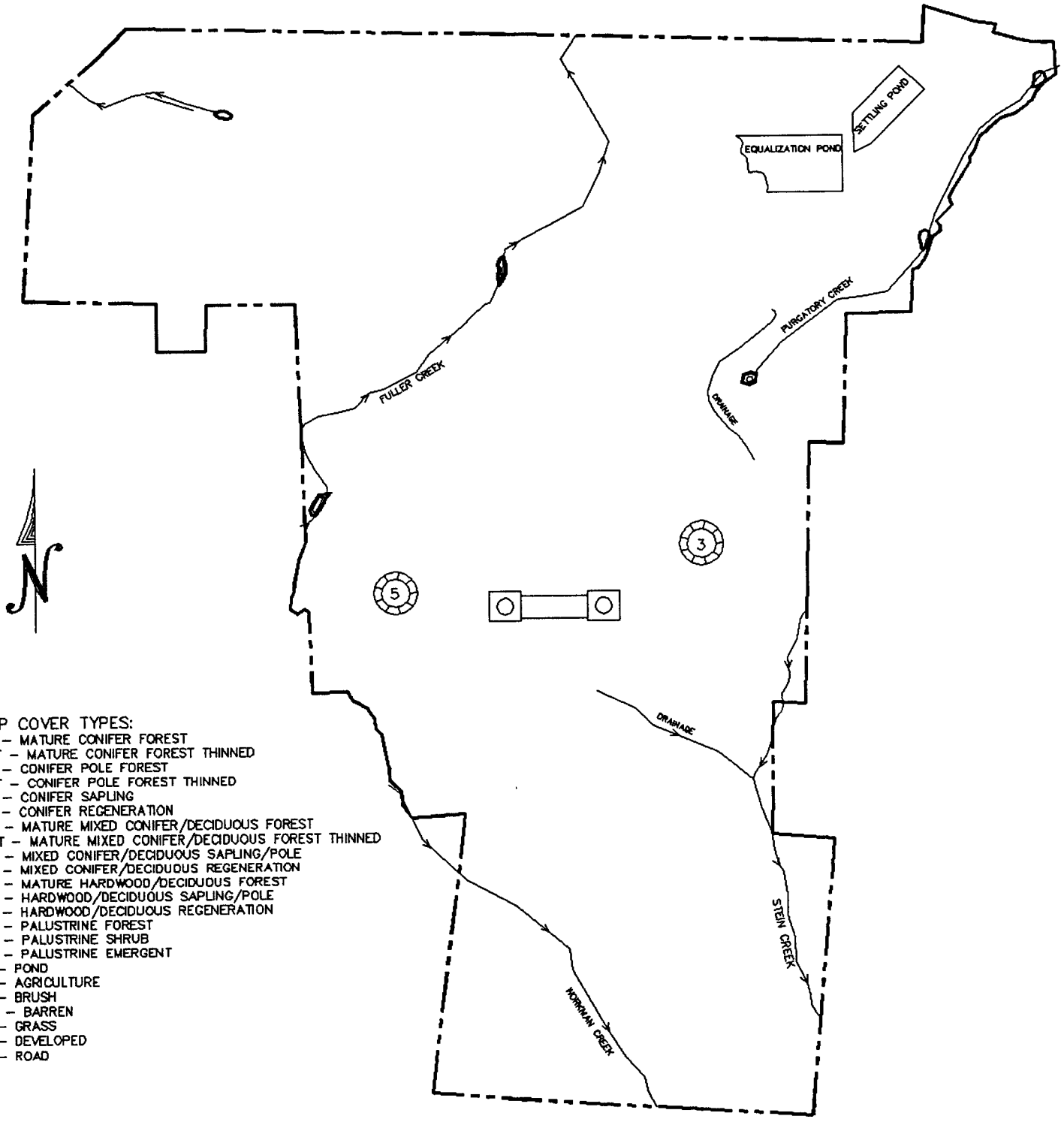
METEOROLOGICAL FIELD
FORAGE ENHANCEMENT AREA

FIGURE 9



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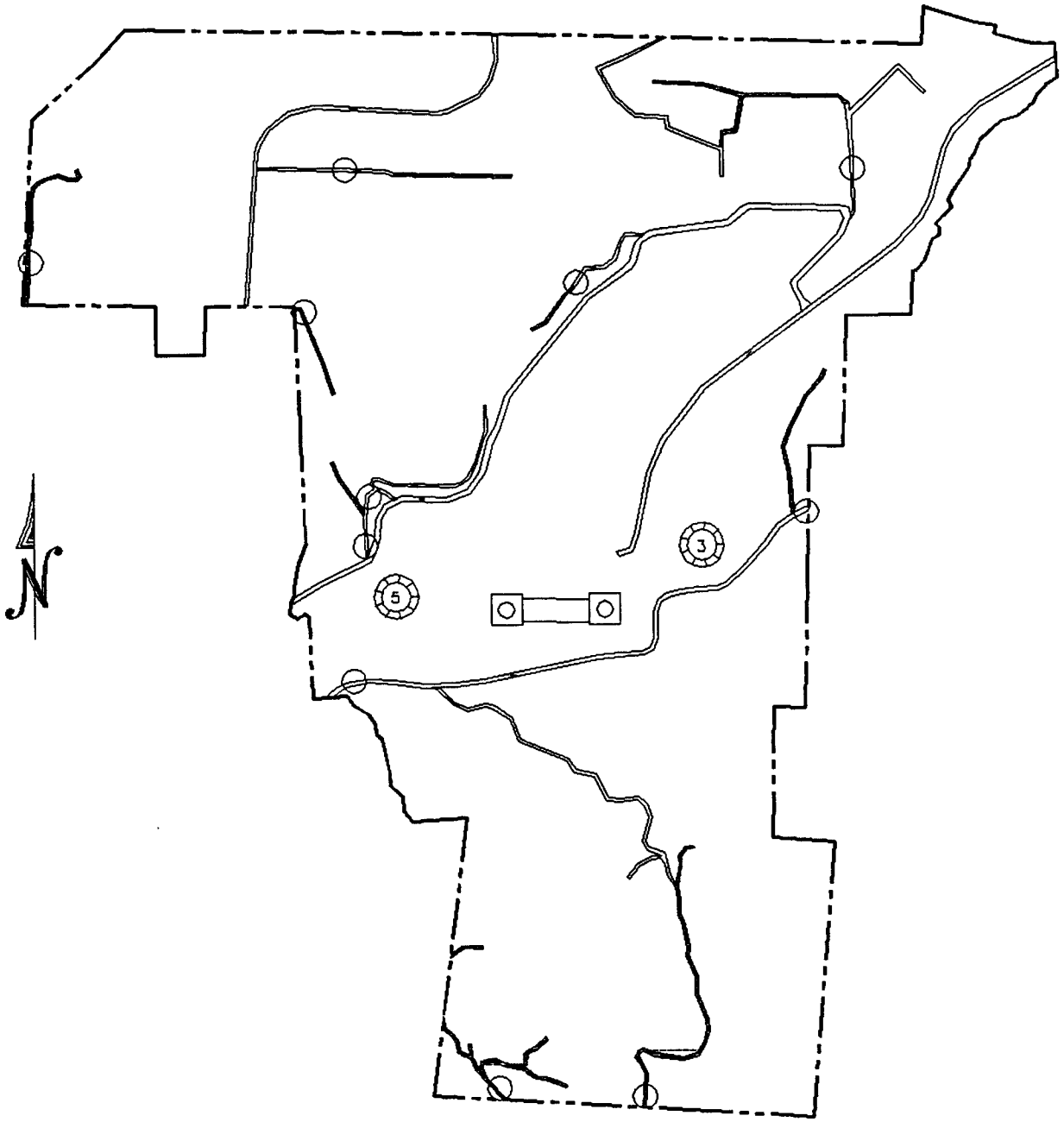
PONDS

FIGURE 10



CLOSED ROADS (ACCESS RESTRICTED)

APPROXIMATE LOCATION OF GATE, BARRICADE OR TREN(

FIGURE 11

AGREEMENT ON MANAGEMENT FOR WILDLIFE MITIGATION ON PERIPHERAL SATSOP SITE PROPERTIES BETWEEN THE STATE OF WASHINGTON DEPARTMENT OF WILDLIFE AND THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM

I. INTRODUCTION

The Wildlife Mitigation Plan, Rev. 0, as approved by Energy Facility Site Evaluation Council (EFSEC) Resolution No. 254, dated August 13, 1990, requires the performance of a Habitat Evaluation Procedure (HEP) analysis of the Satsop Power Plant site to determine what impacts construction, preservation, and future operation of the project will have on wildlife, and to develop, if necessary, wildlife enhancement measures needed to offset wildlife impacts. In addition, the Wildlife Mitigation Plan specified that: 1) when feasible the island portion of the Ranney Well field would be transferred to the Washington Department of Wildlife (WDW); 2) that the HEP would address the impacts of Army Corps of Engineer permitted activities; and, 3) the mitigation credits for on going activities at the raw water well field would be determined.

The Satsop HEP analysis has been initiated and is in the process of completion for most of the Satsop site. In the course of working on the HEP, the HEP team, consisting of representatives of the Washington Public Power Supply System (Supply System) and WDW, determined that it was in the best interests of the HEP process to provide a separate management plan for properties found separate and not joined to the Satsop core area, and exclude them from further HEP analysis. These **Peripheral Lands** include the lands where Army Corps of Engineer permitted activities have occurred and the raw water well field. Attachment I provides a listing of the peripheral properties and a description of the impacts, including acreage.

The Parties enter into this Agreement to identify the commitments and obligations of the Parties with respect to wildlife mitigation on the peripheral lands. The Parties recognize that this agreement modifies the obligations and commitments made in the Wildlife Mitigation Plan, Rev. 0, with respect to the Ranney Well field Island and the raw (potable) water well field. Nothing in this Agreement shall affect the prior obligations and commitments of the Parties with respect to lands not identified herein as the peripheral lands.

The objective of this separate management plan is to recognize the permanent loss of 32 acres of habitat, and to set aside the available 279 acres of disjointed parcels (138 acres of which were altered) to allow for the preservation of riparian, wetland and mature/old growth forest habitats.

II. PERIPHERAL LANDS

The peripheral lands are defined as those Satsop Power Plant lands that will not be assessed under the ongoing HEP, as agreed to by the HEP team. The peripheral lands are specifically identified in Attachment I, Satsop Power Plant Impact Assessment on Peripheral Properties, and Attachment II, site map, both of which are incorporated fully by reference.

A. Wildlife and Habitat Mitigation.

The Supply System and WDW agree that the peripheral properties will be managed by the Supply System as follows.

1. The Supply System will set aside 279 acres as described in Attachments I and II for wildlife mitigation purposes. In the event that proposed future plant requirements and activities might impact these lands, the Supply System and WDW will consult to ensure that wildlife mitigation benefits are maintained. Passive management, as described in section II.B, will be utilized in these areas:

Raw Water Well Field

Graham Parcel

Barge Unloading Facility (BUF)

Ranney Well Field

Ranney Well Field Island

NSSS Haul Road and Spoils Areas

2. Because of river course changes of the Chehalis River the Ranney Well field island is on the north side of the river and adjoining to WDW lands. WDW will be allowed to perform land management activity (farming for wildlife) such as is practiced on the adjoining WDW lands.

B. Peripheral Land Maintenance Activities

While this agreement acknowledges preservation as the preferred management option, the Supply System shall perform, as necessary, the following maintenance activities on peripheral lands:

a) road maintenance, including but not limited to: grading, ditching, and road repairs;

b) weed control, including use of pesticides in accordance with United States Environmental Protection Agency and Washington State Department of Agriculture requirements. Generally, spot spraying is the preferred treatment when pesticide application is necessary. The Supply System shall provide proper training and appropriate supervision of employees or contractors to ensure that only targeted vegetation is sprayed;

c) erosion control, including but not limited to: slope repair, removal of eroded material, ditch maintenance, culvert maintenance, Hyatt Creek dam maintenance, and vegetation planting to assist in erosion control;

d) maintenance of the electrical control building, Ranney Wells, bioassay facility, pipelines, electrical conduit and systems associated with plant operations. This includes all normal servicing, provisioning, and related activities associated with the preservation, continued construction, or operation of the power plant;.

e) bank protection repairs covered under existing Army Corps of Engineer permits;

f) protection of the peripheral wildlife mitigation lands from fire, theft, and vandalism;

g) restriction of off road travel on the peripheral properties used for wildlife mitigation; and

h) placement of signs indicating management for wildlife benefits on the peripheral properties, similar to signs presently used on the Supply System properties for wildlife trees and preservation areas. The signs will be developed in conjunction with the WDW.

C. Wildlife Management Plans

Active wildlife management project proposals may be recommended by either party for any of the listed peripheral properties and put into place upon written concurrence of both parties. Nothing in this agreement precludes the Supply System or the Department of Wildlife from proposing the peripheral properties for enhancements.

III. RAW WATER WELL FIELD

On February 12, 1979 WDW and the Supply System entered into an agreement for the eventual transfer of the raw water well fields property to WDW. The wildlife mitigation plan acknowledged that agreement and left for consideration the benefits of returning management responsibilities to the Supply System. WDW agrees to void that previous agreement and return management of the property to the Supply System under the terms of this agreement.

IV. MISCELLANEOUS

A. Terms of Agreement

This Agreement becomes effective on the date of last signature and continues in force throughout the period of the Site Certification Agreement for Nuclear Projects No. 3 and No. 5 between the State of Washington and the Washington Public Power Supply System, dated October 27, 1976.

B. Modifications to Agreements

Modifications to this agreement may be recommended by either party and put into place upon written concurrence of both parties.

C. Dispute Resolution

It is anticipated that any dispute that arises under this agreement will be resolved by the respective staffs working directly on this matter. Should that not be possible, disputes shall be elevated through the respective chain-of-command up to the Director of Wildlife and the WNP-3/5 Site Manager. In the unlikely event that a dispute should remain unresolved through this process, either party may submit the dispute to the Energy Facility Site Evaluation Council (EFSEC) for resolution.

D. Waiver of Default

Any waiver at any time by any Party hereto of any right with respect to any other Party with respect to any matter arising in connection with this agreement shall not be considered a waiver with respect to any subsequent default or waiver.

E. Assignment

This agreement shall be binding on all successors or assignees.

Signature

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

Charles Butros — 11/11/93

By C.M. Butros, WNP-3/5 Site Manager — Date

WASHINGTON DEPARTMENT OF WILDLIFE

Curt Smitch — 10/29/93

By Curt Smitch, Director — Date

SATSOP POWER PLANT
IMPACT ASSESSMENT ON PERIPHERAL PROPERTIES

ATTACHMENT I

HISTORICAL DESCRIPTION	(acres)	HABITAT BEFORE IMPACT	(acres)	IMPACT	(acres)	(year)	CURRENT HABITAT	(acres)	HABITAT LOST (acres)
Raw Water Well Field	49	Palustrine Forest	34	Developed Well/Road	1	1977	Palustrine Forest	34	1
		Barren	5				Palustrine Emergent	9	
		Grass	10				Barren	4	
							Developed	1	
							Scrub Shrub	1	
Graham (land use as farm)	22	Palustrine Emergent	7	No impact			Palustrine Emergent	7	0
		Palustrine Forest	2				Palustrine Forest	2	
		Hardwood Sapling	2				Hardwood Sapling	2	
		Grass	11				Grass	11	
Barge Unloading Facility (BUF)	20	Palustrine Emergent	4	Construction impacted approx. 60% of habitat:		1980-81	Palustrine Emergent	1	5
		Grass	15				Pond	4	
		Developed/Road	1	Barge slip	4		Developed	6	
				Access road	1		Grass	8	
				Additional habitat modified	6		Hardwood Forest	1	
NSSS Haul Road and Spoils Areas	159	Conifer Unthinned	36	Current mature stands (29 acres) not impacted.			Developed/Road	18	14
		Mixed Forest	36	Brush along BPA corridor (19 acres) not impacted.			Palustrine Forest	3	
		Brush	19	Hyatt Ponds and Dam constructed.		1980	Palustrine Emergent	3	
		Palustrine Shrub	13	NSSS Haul Road (50', 3 mi) constructed.		1979-81	Mixed Forest	19	
		Hardwood	36	Elizabeth Creek relocated.		1977	Grass	23	
		Palustrine Emergent	15	Spoil areas (13 acres) developed:			Hardwood Sapling	46	
		Developed/Road	4	Elizabeth		1979-80	Brush	24	
				Hyatt		1980	Ponds	16	
				Weyco		1980-81	Conifer Unthinned	7	
				Total acres modified:	107				
Elma Visitor's Center	4	Parking Lot, Gravel Pit	3	No impact			Parking Lot, Gravel Pit	3	0
		Building					Building		
		Screening Vegetation	1				Screening Vegetation	1	
Ranney Well Field Island	8	Palustrine Forest	8	No impact			Palustrine Forest	8	0

SATSOP POWER PLANT
IMPACT ASSESSMENT ON PERIPHERAL PROPERTIES

ATTACHMENT I

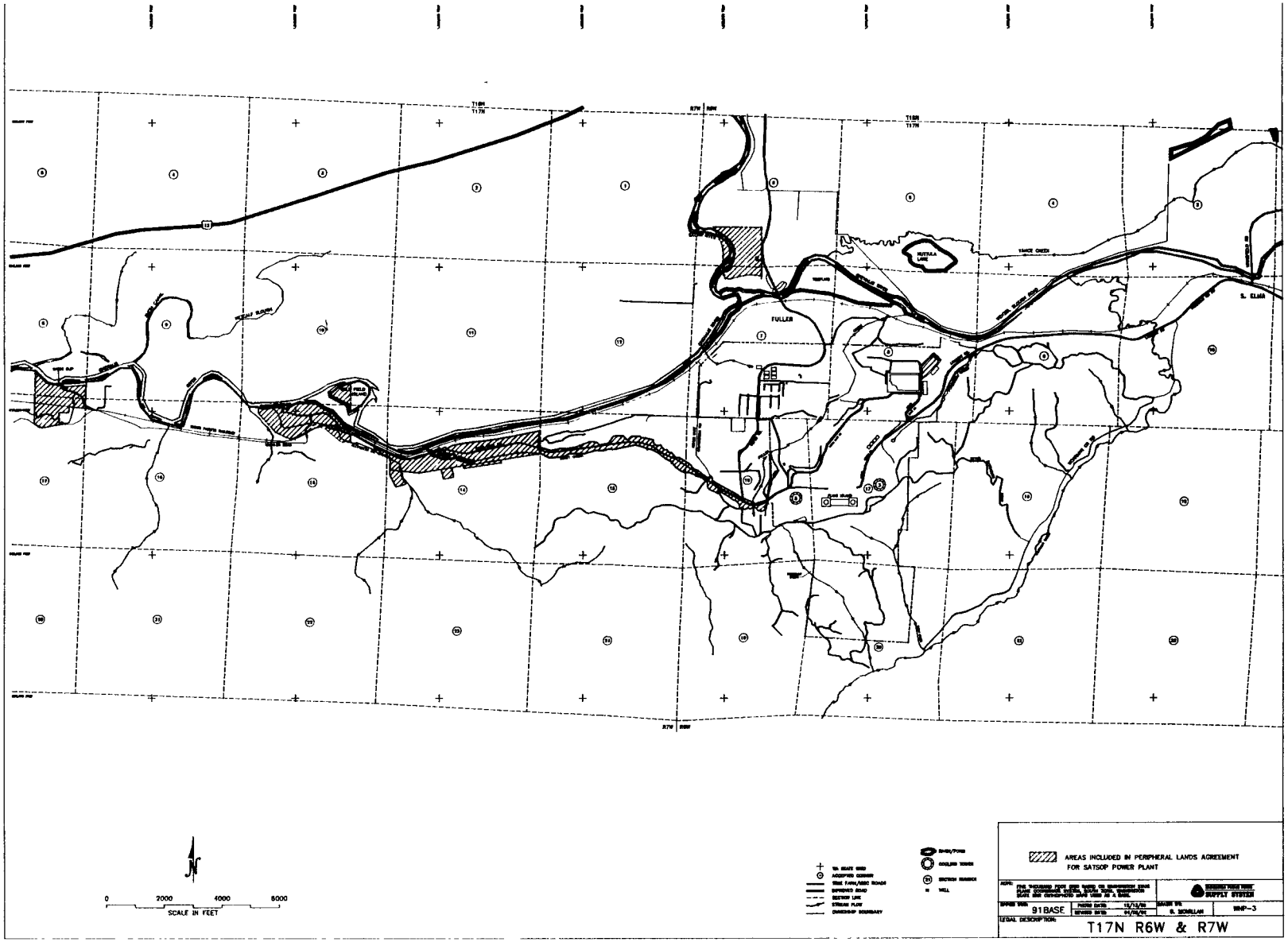
HISTORICAL DESCRIPTION	(acres)	HABITAT BEFORE IMPACT	(acres)	IMPACT	(acres)	(year)	CURRENT HABITAT	(acres)	HABITAT LOST (acres)
Ranney Well Field (land use as potato farm)	48	Agricultural	29	All areas were impacted by construction except scrub shrub around Elizabeth Creek. Construction activities were:			Developed/Road	3	3
		Palustrine Emergent	12				Palustrine Forest	3	
		Scrub Shrub	7				Palustrine Emergent	3	
				Wells and electrical control bldg.		1981	Scrub Shrub	13	
				Bank protection		1980	Grass	24	
				Access road (40', 1/2 mi) and bank protection		1983	Hardwood Sapling	2	
				Total acres modified:	41				
Minkler Road Upgrade	3	Grass	2	Assumed road widened by 20';			Grass	1	1
		Hardwood Forest	1	right-of-way impacted	2	1980-81	Hardwood Forest	1	
							Developed/Road	1	
East Access Road	39	Mixed Forest	16	Workman Creek relocated.		1977	Developed/Road	8	8
		Clearcut	8	Excavated for road.	8	1977-78	Grass	12	
		Hardwood	12				Mixed Forest	4	
		Grass	3				Hardwood Sapling	15	

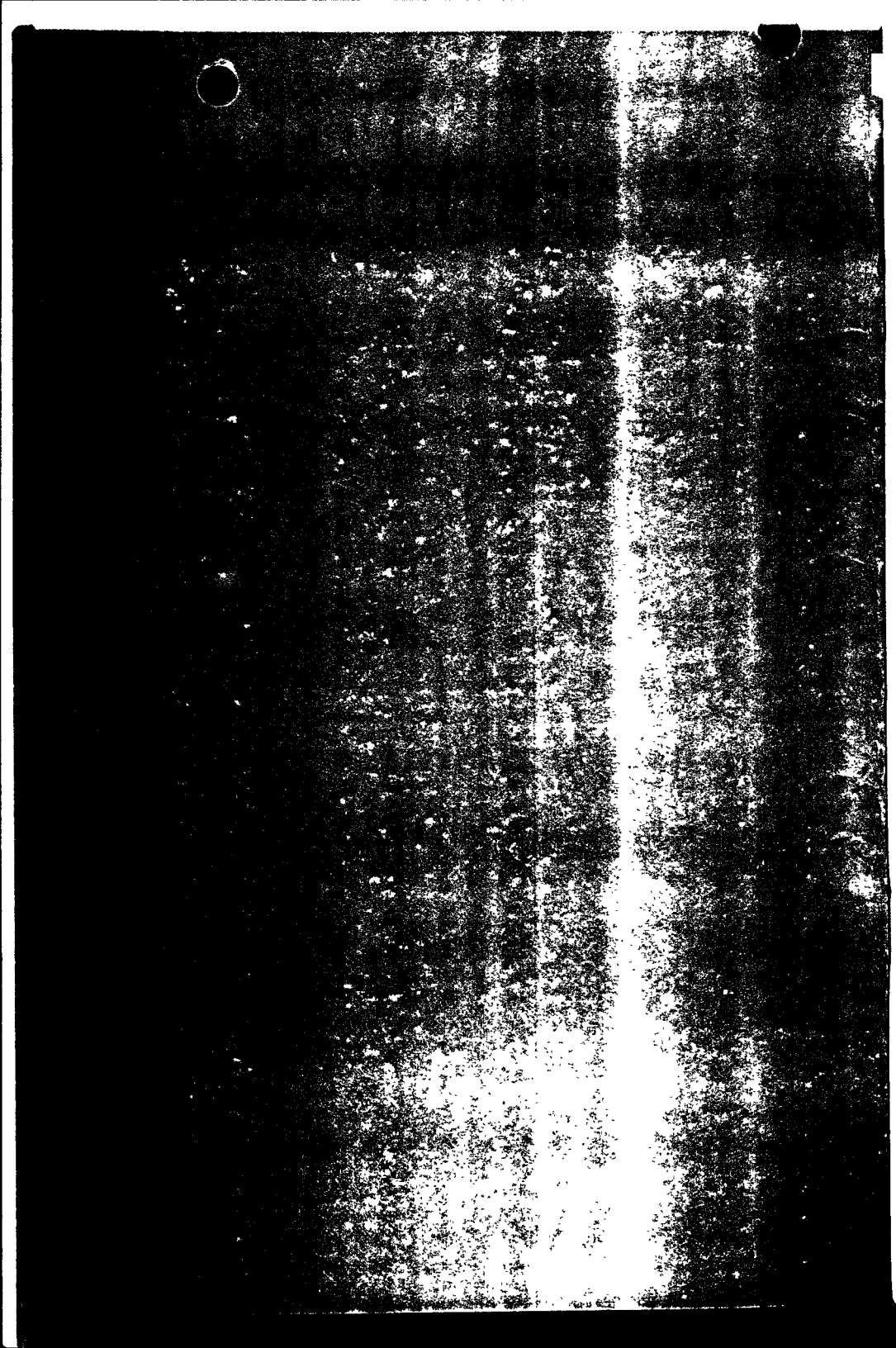
TOTAL PROPERTY RETAINED BY SUPPLY SYSTEM:	310	PREVIOUSLY DEVELOPED ACRES IN USE:	8	SS RETAINED DEVELOPED AREAS:	28
TOTAL PROPERTY TRANSFERRED TO GRAYS HARBOR COUNTY:	42	WILDLIFE HABITAT MODIFIED:	138	TOTAL SS AVAILABE TO WILDLIFE:	282
TOTAL PERIPHERAL AREA:	352	TOTAL ACRES PRESERVED:	174	TOTAL SS RETAINED PROPERTY:	310
		TOTAL HABITAT LOST:	32		
		TOTAL PERIPHERAL AREA:	352		

NOTES:
Habitats before impact were estimated from aerial photographs and 1976 cover type map. Impacts to habitats occurred from conversion to other habitat types or through permanent loss such as roads and buildings. Current habitats were estimated using 1991 aerial photographs and 1991 cover type map. Conversion to totat acres habitat lost was determined by estimating the area of roads or other types of impacts. Road acreages were determined by measuring the length and average width of road, calculating total square feet and converting to acres.

Acres listed for Minkler Road Upgrade and the East Access Road were transferred to Grays Harbor County, or an easement was provided to the County, such that the Supply System has no effective control over road maintenance activities.

Overall results of this assessment on peripheral areas showed that of the total 352 acres, 174 acres had been preserved, 138 acres had been modified by construction activities, 8 acres previously developed remained in use, and 32 acres of habitat had been permanently lost. Total acreage on peripheral areas may be affected by changes in river course.


FULLER
BUTALA LAKE
VANCE CREEK
S. ELMA
0
2000
4000
6000
SCALE IN FEET
AREAS INCLUDED IN PERIPHERAL LANDS AGREEMENT FOR SATSOP POWER PLANT
91BASE
WNP-3
T17N R6W & R7W



SITE CERTIFICATION AGREEMENT

BETWEEN

THE STATE OF WASHINGTON

AND

THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM

WPPSS NOS. 3 AND 5

(Executed October 27, 1976)

NUCLEAR ELECTRIC GENERATING FACILITY
GRAYS HARBOR COUNTY, WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

820 EAST FIFTH AVENUE
OLYMPIA, WASHINGTON

SITE CERTIFICATION AGREEMENT

FOR WPPSS NUCLEAR PROJECTS NO. 3 AND NO. 5

(WNP 3 and 5)

BETWEEN

THE STATE OF WASHINGTON

AND

THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM

SITE CERTIFICATION AGREEMENT

CONTENTS

SITE CERTIFICATION AGREEMENT
FOR WPPSS NUCLEAR PROJECTS NO. 3 AND NO. 5
(WNP 3 and 5)
BETWEEN
THE STATE OF WASHINGTON
AND
THE WASHINGTON PUBLIC POWER SUPPLY SYSTEM

This certification agreement is made and entered into this 27th day of October, 1976, pursuant to chapter 80.50 of the Revised Code of Washington, by and between the State of Washington (hereafter referred to as "State"), acting by and through the Governor of the State of Washington, and the Washington Public Power Supply System (hereafter referred to as "Supply System"), a municipal corporation and joint operating agency of the State of Washington organized in January 1957 pursuant to chapter 43.52 of the Revised Code of Washington.

Supply System filed, as required by law, an application with the Thermal Power Plant Site Evaluation Council, now known as the Energy Facility Site Evaluation Council (hereafter referred to as "Council"), for site certification for construction and operation of its nuclear electric generating project No. 3 and No. 5. The Council reviewed the application, and by order dated June 21, 1976, recommended the approval of the application by the Governor. The Governor approved the application on August 25, 1976, subject to the execution of a certification agreement.

The parties hereto now desire to set forth all terms, conditions, and covenants relating to such site certification in this agreement pursuant to the provisions of RCW 80.50.100(4).

ARTICLE I. SITE CERTIFICATION

A. Site Description

1. The site on which Supply System's project, (hereafter referred to as "WNP 3 and 5" or "project"), is to be constructed and operated is located in Grays Harbor County, Washington, south of the Chehalis River, and is more particularly described in Attachment I attached hereto and incorporated herein by reference.

B. Site Certification

1. State hereby authorizes Supply System's nuclear electric generating project known as WNP 3 and 5 to be located, constructed and operated on the site described in Section I.A.1 hereof. WNP 3 and 5 consist of two nuclear fueled steam electric generating units. Each of the units includes a pressurized water nuclear reactor with a maximum

rated output of approximately 3800 megawatts thermal, a turbine generator, a natural draft evaporative cooling tower system, a reactor auxiliary building, certain associated transmission and service lines and other associated facilities required for the generation and transmission of electric power necessary for achieving a net electric generation capacity of approximately 1240 megawatts from each unit.

2. Supply System hereby agrees to construct and operate WNP 3 and 5 on the above described site subject to the terms and conditions of this certification agreement.

ARTICLE II. GENERAL CONDITIONS

A. Legal Relationship

1. This certification agreement is made in lieu of any permit, certificate or similar document required by any department, agency, division, bureau, commission or board of this state.

2. Supply System agrees to enter into a lease with the State Department of Natural Resources for use of certain public state land needed for this project.

3. Liquid discharges from the project to navigable waters made in accordance with the National Pollutant Discharge Elimination System (NPDES) permit issued by the Council on April 26, 1976 as amended will comply with the applicable provisions of §1311, 1312, 1316, 1317, Title 33, United States Code.

4. This certification agreement shall bind Supply System and the State or any of its departments, agencies, divisions, bureaus, commissions, or boards subject to all the terms and conditions set forth herein.

5. This certification agreement is subject to federal laws and regulations applicable to the project and to the terms and conditions of any permits and licenses which may be issued to Supply System by appropriate federal agencies.

6. This certification agreement constitutes the whole and complete agreement between the parties and supersedes any other negotiations, representations or agreements, either written or oral, and not set forth herein.

B. Enforcement

1. This certification agreement may be enforced by resort to all remedies available at law or in equity.

2. This certification agreement may be revoked, suspended, or modified by the State for failure by Supply System to comply with any of the terms and conditions herein, or for violations of chapter 80.50 RCW, regulations issued thereunder, and any other applicable state or federal laws or regulations, or for violation of any order of the Council.

3. Where any action of the Council is required by this agreement, the Council may, but shall not be required to, conduct a hearing pursuant to RCW 34.04. If the Council withholds or refuses approval of a requested action and a moving party requests a hearing, it shall be conducted pursuant to RCW 34.04.

C. Notices and Filings

1. Filing of any document or notice required by this agreement with the Council shall be deemed to have been duly made when delivered to the Council's offices in Olympia, Washington. Notice to be served upon the Supply System shall be deemed to have been duly made when delivered to the office of the Managing Director of the Supply System.

D. Right of Inspection

1. Supply System agrees to provide access to the project site and all facilities thereon, subject to applicable health and safety regulations, to designated representatives of the Council in the performance of their official duties.

E. Certification Compliance Costs

1. Supply System agrees to pay reasonable and necessary costs for inspection and determination of compliance with conditions of the certification agreement. The amount and manner of such payment shall be prescribed by the Council.

ARTICLE III. PROJECT CONSTRUCTION

A. Construction Schedule

1. Supply System agrees to submit a quarterly Construction Progress Report to the Council.

2. Supply System agrees to (a) notify the Council immediately in the event of any significant change in the construction schedules on file with the Council, and (b) serve copies on the Council of all "Notices to Proceed" which are issued to contractors with respect to contracts requiring work in the Chehalis River.

B. Access Roads and Railroads

1. All permanent primary roads, temporary roads, and railroads constructed by Supply System or its contractors for servicing the plant's central facilities shall be in accordance with appropriate standards set forth by state law or regulation. Supply System agrees to make available to the Council design and construction plans upon its request.

C. Aesthetics and Landscaping

1. Supply System agrees to construct the project in a manner which is aesthetically compatible with the adjacent area.

2. Supply System agrees to landscape the project lands within the fenced perimeter in a manner which is compatible with its surroundings, using indigenous plants and vegetation where possible.

3. In the event of damage to or removal of vegetation resulting from construction by Supply System, Supply System agrees to return the area affected to original topsoil condition and to restore indigenous plant species.

4. Supply System agrees to restore the hill slope and the pipeline corridor or corridors of the intake systems and of the discharge systems to original topsoil condition to promote revegetation of indigenous plant species.

D. Surface Run-off and Erosion Control

1. During construction Supply System agrees to require its contractors to employ all means necessary to meet standards set forth in this agreement and any other reasonable means in order to avoid soil erosion. Supply System agrees to set forth such conditions necessary thereto in its bidding documents, plans, and contracts, which will be developed in consultation with the Council.

2. Supply System agrees to comply with provisions relating to excavation and erosion control described in Attachment II attached hereto and incorporated herein by reference and will require all contractors to comply therewith.

3. Sedimentation, erosion control, dust control, and related construction plans pertaining to work on the site and on permanent and/or temporary roads and railroads must conform to requirements set forth in Attachment II or alternative plans submitted by Supply System to and accepted by the Council.

4. Supply System agrees to make available all sedimentation and erosion control system plans to the Council upon its request.

5. In the event of unforeseen surface water runoff during construction, Supply System agrees to comply with all pertinent industry standards for control of such runoff during construction. Supply System further agrees to take such actions as are deemed necessary and reasonable by the Council to control said runoff. Supply System agrees to promptly notify the Council of the occurrence or likely occurrence of any surface water runoff problem.

6. Supply System shall take such steps as are necessary to assure that all construction activity will not result in a violation of applicable turbidity criteria in the State of Washington Water Quality Standards. The Council may, in its discretion, grant a temporary waiver of such standards upon request by Supply System.

E. Transmission Lines

1. Associated transmission lines for the project will connect the project to the Northwest Power grid at a point approximately 2000 feet north of the plant site on the Bonneville Power Administration rights of way which pass north of the plant site and presently connect the Aberdeen-Hoquiam and Olympia areas.

   Approximately seventy (70) miles of new transmission lines must be constructed by BPA if the output of the project is to be connected and integrated into the Northwest Power Grid.

2. Construction of all associated transmission and service lines must comply in design and construction with applicable standards stated in the following listed documents:

   a. "Environmental Criteria for Electrical Transmission Systems," U.S. Department of Interior, U.S. Department of Agriculture, February, 1970.

   b. Final Supplement to the Environmental Statement, Fiscal Year 1976 Proposed Program, Satsop Integrating Transmission as prepared by the Bonneville Power Administration, June 8, 1976.

   c. BPA Environmental Statement for Fiscal Year 1976.

   d. "Measuring the Social Attitudes and Aesthetic and Economic Considerations Which Influence Transmission Line Routing, Appendix A, Environmental Guidelines for Transmission Lines, R.W. Bahl, B.A. Gray and W.S. Maynard, Battelle Pacific Northwest Laboratories, Richland, Washington, July, 1974.

3. Approval of the project is based on the announced decision by the Bonneville Power Administration as embodied in letter dated October 18, 1976 from BPA designated as Attachment V and incorporated herein by this reference, that the approximately seventy (70) miles of new transmission lines designated as ALTERNATE ROUTE 1A will be constructed and located in accordance with the provisions of the publication specified in E.2.b. above.

F. Water Intake Systems

1. Supply System shall be permitted to construct and maintain an intake system to withdraw water utilizing wells, which system shall conform with standards and conditions provided in this agreement for construction and operation of the project.

2. Supply System agrees to consult with the Council or with its designated representatives in development of plans, bid documents, and contracts for construction of the water intake system, all of which Supply System agrees to make available to the Council upon its request.

3. Supply System further agrees to submit in a timely manner specific location plans, drawings and construction contracts for installation of the intake system to the Council for its review and comment. If the Council has objections to any of the particulars of the materials submitted, it shall forthwith advise Supply System of same and the reasons therefor. Supply System agrees to take such corrective action as may be necessary to satisfy the

objections before commencing any site preparation or construction of the intake system.

4. Supply System agrees to install the permanent power supply to the water intake facilities by means of an underground circuit.

5. Supply System agrees to construct water intake system in accordance with the following terms and conditions:

   a. In any well system utilized for potable, construction or operations water, no portion of any well or lateral shall be within twenty (20) feet of the Chehalis River. No cross connection shall be permitted between the potable/construction water supply system and the plant makeup water supply system.

   b. Any material placed by Supply System upon the river bank for bank protection shall be clean and of sufficient size to prevent it from being washed away. Bank protection activities shall be coordinated with the Council or its designated representatives.

c. Construction activity in Chehalis River main stem or tributary stream channels or on stream banks must be confined to the period May 31 to September 15 unless otherwise specifically approved by the Council.

d. Supply System agrees that plans and bid documents for construction of the intake system must comply with all state, federal and local flood zone requirements.

6. Supply System is authorized to withdraw up to 1000 gallons per minute for construction water uses during the period of construction and seven gallons per minute for potable water uses from ground water in an area near the confluence of the Chehalis and Satsop Rivers.

7. Supply System shall provide a continuous recording metering system on water intake facilities to provide a written chronologic record of the amount of water withdrawn by the project at all times. Records of flow metering shall be available for inspection by the Council or designated representatives at all times. Supply System agrees to furnish

to the Council at quarterly intervals commencing within 90 days of the first withdrawal of water, a summary of all withdrawals. Such summary shall indicate, in cubic feet per second, instantaneous maximum withdrawal, daily average withdrawal, and monthly average withdrawal.

8. Supply System agrees to acquire 62 cfs of surface water from the City of Aberdeen for continual release below Aberdeen's diversion dam near river mile 8.1 on the Wynoochee River.

G. Discharge System

1. Supply System shall be permitted to construct, maintain and operate a discharge system on the shoreline and in the bed of the Chehalis River, within the site, for operation of the project. Such discharge system shall be subject to the terms and conditions of this agreement and the NPDES permit issued by the Council and attached hereto as Attachment III and incorporated herein by this reference.

2. Supply System agrees to consult with the Council or its designated representatives in the development of plans, bid documents, and contracts for construction of the discharge system.

3. Supply System further agrees to submit in a timely manner specific location and design plans, drawings, bid documents, and construction contracts for installation of the discharge system to the Council for its review and comment. If the Council has objections to any of the particulars of the materials submitted, it shall forthwith advise Supply System of same and the reasons therefor. Supply System agrees to take such corrective action as may be necessary to satisfy the objections before commencing any site preparation or construction of the discharge system.

4. Construction activity in the Chehalis River main stem or tributary stream channels or on stream banks must be confined to the period May 31 to September 15, unless otherwise specifically authorized by the Council.

5. Supply System agrees to maintain in good working order, and properly operate the cooling tower and all other waste recovery and pollution abatement facilities under its control.

6. Supply System agrees to dispose of sanitary wastes in accordance with the terms of the NPDES permit attached hereto as Attachment III.

7. The discharge pipe used to discharge effluent from plant operation shall be buried at a sufficient depth to insure its integrity and shall be covered with a layer of natural materials level with the bed of the river. Excavated material shall not be placed, held or stockpiled in the river while being retained for later replacement over the pipe. Any concrete used for constructing the outlet structure shall be isolated from the river waters during any placing and curing.

8. Supply System shall be permitted to discharge up to 16 cfs maximum daily effluent from its project cooling towers at a location in the SW quarter of Section 7, Township 17N., Range 6W., W.M.

H. Barge Slip

1. Supply System may construct and maintain a barge slip for construction of the project, subject to conditions stated in this agreement and other attachments hereto.

2. Supply System agrees to consult with the Council or its designated representatives in the development of plans, bid documents, and contracts for construction of the barge slip.

3. Supply System further agrees to submit in a timely manner specific location and design plans, drawings, bid documents, and construction contracts for installation of the barge slip to the Council for its review and comment. If the Council has objections to any of the particulars of the materials submitted, it shall forthwith advise Supply System of same and the reasons therefor. Supply System agrees to take such corrective action as may be necessary to satisfy the objections before commencing any site preparation or construction of the barge slip.

4. Construction activity associated with the barge slip in the Chehalis River main stem or tributary stream beds or stream banks must be confined to the period May 31 to September 15 unless otherwise specifically authorized by the Council.

5. Supply System agrees to provide comprehensive data at the earliest possible time indicating tne anticipated effect of construction of the barge slip on turbidity in the Chehalis River and its tributaries in the vicinity of the barge slip. Supply System agrees to demonstrate to the Council that its construction of the barge slip will comply with the turbidity criteria set out in State Water Quality Standards except when, on request, the Council has granted a temporary waiver of such criteria.

6. During construction of any such temporary barge slip, Supply System agrees to: (a) establish and maintain grading and sloping on the bed and bank of the Chehalis River and tributary creek construction area so as not to create fish traps; (b) construct the barge slip in the dry during the period of low river flow; (c) submit plans to the

Council if requested, concerning all proposed procedures for underwater excavation attendant to the construction of such facilities; and (d) do no dredging in the Chehalis River or its tributaries except for the entrance to the barge slip.

7. After the temporary barge facilities have served their intended purpose, Supply System agrees to restore the barge construction area to water oriented-uses, including recreational uses. Supply System agrees to consult with the Council regarding such restoration.

8. Supply System shall arrange for the arrival of the reactor vessel barges to coincide with times during which the net instantaneous downstream flow of the river is sufficient to provide adequate river passage and navigational control of barges and prime movers.

I. Construction Clean-Up

Supply System agrees upon completion of construction to dispose of all temporary structures not required for future use. It also agrees to dispose

of used timber, brush, refuse or flammable material resulting from the clearing of lands or from the construction of the project in a manner agreed to by the Council.

J. As-Built Drawings

Supply System agrees to allow access to the Council or its designated representatives, on request, to complete sets of as-built drawings for the following listed project components and for other components as the Council may require in the future:

a. Water intake systems;
b. Water discharge system, including construction runoff control systems;
c. Sanitary waste disposal system;
d. Cooling towers and condenser coolant loop;
e. Demineralized water system;
f. Radwaste system;
g. All associated electrical transmission and service lines and substations;
h. Off gas stack and associated systems;
i. Temporary barge off-loading facility;
j. Enviromental monitoring installations;

k. Access and temporary construction roads;

l. Railroad right-of-way.

K. Archaeological Site Protection

1. Supply System agrees to retain the services of a qualified archaeologist to inspect the site in the course of the construction and excavation of the project, including associated transmission line corridors, to determine whether archaeological or historical sites are being disturbed, and to preserve and provide for interpretation of any archaeological site discovered in the course of construction.

2. Supply System agrees to report to the Council all archaeological or historical findings made during the course of excavation and construction of the project and associated transmission lines.

3. Supply System agrees to consult with the Council to arrange for preservation of artifacts and for interpretation of any archaeological or historical site discovered in the course of any construction.

ARTICLE IV. OPERATION OF THE PROJECT

A. Water Withdrawal

1. The Supply System is hereby authorized to withdraw water for operation of the project in an amount not exceeding 52,000,000 gallons per day and a 30-day average of 48,500,000 gallons per day, from well water supplies of the Chehalis River within Sections 10 and 15, Township 17, Range 7, West, W.M., subject to applicable terms and conditions stated in this agreement. Instantaneous withdrawal may at no time exceed 80 cfs.

2. Said authorization shall be suspended at any time the river's net instantaneous downstream flow at the point or any of the points of withdrawal falls below the rate of 550 cubic feet per second, exclusive of any tidal influence.

3. Should the withdrawal of water for operation of the project impair existing water rights, Supply System agrees to compensate the holder of such rights for such impairment caused by the withdrawal, and to take necessary measures to prevent recurrence of such impairment.

B. Water Discharge

1. No liquid radioactive waste shall be discharged into the Chehalis River, its tributaries or other state waters during normal plant operations.

2. All discharges by the Supply System to state waters shall be subject to the terms and conditions of this agreement and of the NPDES permit as amended and issued by the Council and attached hereto as Attachment III.

C. Discharge Into Air

1. Supply System agrees to construct and operate the project in such a manner as to not discharge nor cause to be discharged into the ambient air materials resulting from the operation of auxiliary boilers and emergency diesel engines which, measured at the point of discharge, will directly result in:

a. Nitrous oxides, measured as nitrogen dioxide, in excess of 0.3 lbs/10^6 BTU;

b. Sulfur dioxide in excess of 0.8 lbs/10^6 BTU; or

c. Ash in excess of 0.2 lbs/10^6 BTU.

2. Supply System agrees to incorporate all known, available and reasonable technology in the design of the cooling towers and to operate the towers so as to minimize fogging and icing effects on the surrounding areas and highways.

3. Levels of radioactive discharges to the atmosphere shall be as low as practicable and shall not exceed applicable federal standards.

D. Vegetation, Fish, and Animal Life

1. Supply System agrees to provide replacement and/or compensation, as established by the Council, for any wildlife, fish, or other aquatic life or ecosystem damage or loss caused by construction or operation of the project.

2. Supply System shall provide such additional measures for protection of wildlife, fish, and other aquatic life and the ecology of

area deemed necessary by the Council to minimize adverse impact from construction or operation of the project.

ARTICLE V. PUBLIC AND ENVIRONMENT PROTECTION

A. Emergency Plan

1. Supply System will develop an Emergency Plan in accordance with 10 CFR 50.34a and 10 CFR 50 Appendix E. In preparing that plan Supply System agrees to:

   a. Coordinate such plan with local, state and federal agencies directly involved in implementing such a plan.

   b. Include detailed provisions in the Emergency Plan for public health and safety, emergency medical treatment, special emergency training programs and prevention of property damage.

   c. Comply with relevant provisions of the Washington State Department of Emergency Services' Radiological Emergency Response Plan or successor document.

   d. Periodically provide the Council with updated lists of emergency personnel, communication channels and procedures.

B. Security Plan

1. Supply System will submit a comprehensive physical Security Plan for the protection of the project facilities against acts of industrial sabotage in accordance with the Nuclear Regulatory Commission's operating licensing process.

2. A short description of the Security Plan will be published in Section 13.7 of the Final Safety Analysis Report, which will be available for public review; however, the actual Security Plan will be withheld from public disclosure pursuant to 10 CFR 2.790d.

C. Monitoring Program

1. Supply System agrees to initiate and maintain Environmental Monitoring Programs as described in Attachment IV attached hereto and incorporated herein by this reference. The programs shall be developed and implemented

in close consultation with the Council and shall be subject to Council approval. Reasonable modifications may be made with approval of the Council, when these are necessary to achieve the purpose of the program. Aquatic, terrestrial ecology and water quality surveillance shall begin prior to land clearing or other site alteration. Other programs shall begin in accordance with schedules contained in Attachment IV referred to above.

2. The Radiological Monitoring Program shall be in accordance with NRC requirements and shall be initiated two years prior to fuel loading to provide for measurement of radioactive releases from the facility and a reliable assessment and record of their distribution and retention in the environment within an area to be described by the Council and approved by federal regulatory agencies.

3. Supply System may engage a qualified consultant to carry out all or any portion of the environmental monitoring studies required to effect the Monitoring Program set forth in Attachment IV hereof. Supply System agrees to submit the required qualifications for the consultant, and bid documents, to the Council for approval prior to solicitation of pro-

posals from any such consultant. Supply System agrees to require the consultant to comply with all applicable conditions of this agreement and a valid NPDES permit issued by the Council.

4. Supply System agrees to submit to the Council, on request, any information or data recorded by Supply System's Monitoring Program, and, on a regular basis, copies of reports from the monitoring programs. Where additional reports or notifications are required to be filed by the Nuclear Regulatory Commission's construction permit, operating license or other regulations, copies of such reports or notifications shall be submitted to the Council, at the same time as when submitted to the Nuclear Regulatory Commission.

5. In carrying out monitoring programs, Supply System shall establish to the Council's satisfaction and approval sampling locations on and off the project site sufficient to provide a representative sampling of environmental effects in the surrounding area.

6. At the time of start-up of the first generating unit, Supply System shall make a report on pre-operational monitoring data and shall establish baseline reference values for all parameters in such report. The report shall be submitted to the Council within ninety (90) days after start-up of the first unit. Annual reports on a calendar year basis shall be submitted thereafter by March 31 of each year summarizing operational data, anomalies therein and comparisons made with previously established baseline data, except that emergency conditions or situations including emergency plant shut downs shall be reported immediately to the Council.

7. Supply System agrees to report immediately to the Council whenever the monitoring program discloses existence of abnormal conditions or conditions that might lead to an emergency situation.

8. Requirements of the Monitoring Program may be changed upon a showing that the degree of monitoring is not commensurate with the actual or intended results of such efforts. Such changes shall be effected as deemed necessary by mutual agreement of the Council and Supply System. Such changes shall be

governed by the procedures in this paragraph and shall not be subject to the modification procedures specified in Section VI.C. hereof.

ARTICLE VI. MISCELLANEOUS PROVISIONS

A. Project Visitation and Recreation

1. Supply System agrees to provide visitor information facilities for the project.

2. Supply System agrees to provide replacement of recreational opportunities found by the Council to be adversely affected by project activity. Affected areas may include, but are not limited to, land owned or controlled by Supply System immediately outside the project security area and detached parcels associated with project facilities or routes. Supply System may impose reasonable health, safety, and security regulations on use of recreational areas.

3. Supply System agrees to take necessary measures to allow safe use by members of the public on land and water areas over which the Supply System exercises control and to which public access has been granted.

4. All reporting costs and other costs, directly or indirectly incurred as a function of the monitoring or surveillance programs found necessary herein shall be borne by Supply System.

B. Social and Economic Impacts

1. Supply System agrees to monitor primary and secondary socio-economic impacts of the project during construction and to report quarterly the results to the Coucil.

2. Supply System agrees to pay any valid claims filed against it by the state or by any agency or political subdivision of the state, including but not limited to counties, cities and school districts, arising out of an actually incurred or clearly anticipated net financial burden or deficiency substantially caused by primary or secondary socio-economic or environmental impacts from construction or operation of the project. Any such net financial burden or deficiency shall be calculated by allowing as a credit or offset against the total financial burden or deficiency

so caused any revenues to the claimant reasonably attributable to construction or operation of the project. With respect to any clearly anticipated net financial burden or deficiency, payment of such claim shall be made to the claimant no later than the time such burden or deficiency is actually incurred. The burden of establishing the validity of any such claim shall be upon the claimant.

3. Any dispute arising out of the provisions of Section VI.B shall be resolved by decision of the Council made pursuant to procedures set forth in RCW 34.04.

C. Modification of Agreement

1. This certification agreement may be amended pursuant to Council rules and procedures then in effect and in like manner as the development of this original certification agreement, including, but not limited to, obtaining approval of the Governor. Any such amendments to this agreement shall be made in writing.

2. Any change of an NPDES permit or any modification of this agreement required by federal law or regulations shall be governed by applicable law and regulation and shall not require modification of this agreement in the manner prescribed in C.1 above.

3. In circumstances where a significant degree of adverse impact on the environment exists or is imminent, the Council may impose specific conditions or requirements upon Supply System in addition to the terms and conditions of the certification agreement as a consequence of said situation. Such additional conditions or requirements shall be effective for not more than 90 days, and may be extended for additional 90 day periods if deemed necessary by Council.

D. Decommissioning

Supply System shall submit for the Council's approval within five (5) years of execution of this agreement, a plan for decommissioning and disposal of the project.

E. Discharge of Pollutants

Nothing in this certification agreement shall be construed to authorize discharge of pollutants form the project to state waters in any fashion other than that authorized in an NPDES permit issued by Council.

F. Attachments

Attachments hereto by this reference are included in this agreement:

I. Site Description.
II. Provision regarding excavation and erosion control.
III. NPDES permit.
IV. Monitoring programs.
V. Bonneville Power Administration letter.

STATE OF WASHINGTON

By _____
DANIEL J. EVANS, Governor

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

_____
J. J. Stein, Managing Director

ATTACHMENT 1

SITE LEGAL DESCRIPTION

The site at, on, and in which the Project is to be constructed and operated is located in Grays Harbor County, Washington, and is more particularly described as follows:

Government Lot 3 in Section 6, Government Lot 8 in Section 7, a strip of land 20 feet in width extending over and across Government Lot 9 in Section 7 from a point in the west line of Government Lot 9 described as being 300 feet South of the Northeast corner of Government Lot 8 to a point in the westerly right-of-way line of Keys Road described as being South 760 feet and West 2,050 feet from the Northeast corner of Section 7, the Keys Road right-of-way within the North half of Section 7, that portion of South 1/2 of Section 7 lying south of the railroad right-of-way, and less the west 344 feet.

Southwest 1/4 of Section 8, West 1/2 of the Southeast 1/4 of Section 8, that part of east 1/2 of Southeast 1/4 of Section 8 lying west of drainage, that part of Southeast 1/4 of Northeast 1/4 of Section 8 lying South of the railroad right-of-way, Southwest 1/4 of Southeast 1/4 of Southeast 1/4 of Section 8.

West 3/4 of West 1/4, less East 1/2 of Northwest 1/4 of Northwest 1/4 of Section 16,

All Section 17,

East 3/4 of Section 18,

Northeast 1/4 of Northeast 1/4 of Northwest 1/4 of Section 19, North 1/2 of Northeast 1/4 of Section 19, Northeast 1/4 of Southwest 1/4 of Northeast 1/4 of Section 19, Southeast 1/4 of Northeast 1/4 of Section 19,

Northwest 1/4 of Section 20, North 1/2 of Northeast 1/4 of Section 20, Northwest 1/4 of Southeast 1/4 of Northeast 1/4 of Section 20, North 3/4 of Southwest 1/4 of Northeast 1/4 of Section 20,

Northwest 1/4 of Northwest 1/4 of Northwest 1/4 of Section 21,

All of the above parcels are in Township 17 North, Range 6 West of the Willamette Meridian, Grays Harbor County, Washington.

A parcel of land within the right-of-way of the Union Pacific Railway in the southwest quarter of Section 7, Township 17 North, Range 6 West of the Willamette Meridian, Grays Harbor County, Washington, more particularly described as follows:

Beginning at a point in the south line of said railroad right-of-way which point bears South 88°47'28" East, 344.28 feet and North 3°32'09" East, 1762.14 feet from the west quarter corner of said Section 7, said point of beginning being opposite approximate railroad centerline station 1887+97; thence at right angles to said right-of-way North 41°27'51" West, 200.00 feet to a point in the north line of said right-of-way; thence along said north line North 48°32'09" East, 120.00 feet; thence South 41°27'51" East, 200.00 feet to a point in the south line of said right-of-way; thence along said south line South 48°32'09" West, 120.00 feet to the point of beginning.

Basis of Bearings: Washington State Coordinate System, South Zone.

A portion of the river bed and south bank of the Chehalis River in the southwest quarter of Section 7, Township 17 North, Range 6 West of the Willamette Meridian, Grays Harbor County, Washington, more particularly described as follows:

Beginning at the northwest corner of the above described parcel, which point bears South 88°47'28" East, 344.28 feet and North 3°32'09" East, 1762.14 feet and North 41°27'51" West, 200.00 feet from the west quarter corner of said Section 7; thence continuing North 41°27'51"West, 150.00 feet; thence North 48°32'09" East, 120.00 feet; thence South 41°27'51"East, 200.00 feet to the northeast corner of the above described parcel; thence South 48° 32'09" West 120.00 feet to the point of beginning.

Basis of Bearings: Washington State Coordinate System, South Zone.

A strip of land of varying widths over and across Sections 9, and 10 Township 17 North, Range 6 West of the Willamette Meridian, Grays Harbor County, Washington, said strip of land lying on each side of the following described centerline:

Beginning at a point in the Access Road centerline, which point bears South 26° 13' 16" West, 116.76 feet from the west quarter corner of said Section 9, said point of beginning being centerline station 64+08.69; thence along the arc of a 2915.01 foot radius curve to the right, which chord bears North 64° 30' 45" East, 51.88 feet, an arc distance of 51.88 feet to a point in the west line of said Section 9 and centerline station 64+60.57; thence continuing along the arc of 2915.01 foot radius curve to the right, which chord bears North 66° 16' 45" East, 127.88 feet, an arc distance of 127.89 feet; thence North 67° 32' 10" East, 754.30 feet; thence along the arc of a 1720.04 foot radius curve to the right, which long chord bears North 76° 46' 55" East, 552.72 feet, an arc distance of 55.13 feet; thence North 86° 01' 40" East, 1740.96 feet; thence along the arc of a 4969.11 foot radius curve to the right, which long chord bears North 89° 15' 10" East, 559.10 feet, an arc distance of 559.39 feet; thence South 87° 31' 20" East, 940.39 feet; thence along the arc of a 1840.37 foot radius curve to the right, which chord bears South 80° 33' 42" East, 446.05 feet, an arc distance of 447.15 feet to centerline station 115+85.78, which point bears North 7° 04' 06" East, 568.90 feet from the quarter corner between said Section 9 and Section 10; thence continuing along the arc of a 1840.37 foot radius curve to the right, which chord bears South 72° 31' 14" East, 69.43 feet, an arc distance of 69.43 feet; thence South 71° 26' 23" East, 132.66 feet; thence along the arc of a 670.00 foot radius curve to the left, which long chord bears North 86° 49' 33" East, 496.21 feet, an arc distance of 508.31 feet; thence 65° 05' 29" East, 1208.17 feet; thence along the arc of a 1434.80 foot radius curve to the left, which long chord bears North 54° 49' 13" East, 511.67 feet, an arc distance of 514.42 feet; thence North 44° 32' 57" East, 292.10 feet; thence along the arc of a 3992.19 foot radius curve to the right which long chord bears North 48° 33' 40" East, 558.63 feet, an arc distance of 559.08 feet; thence North 52° 34' 23" East, 815.00 feet; thence along the arc of a 561.86 foot radius curve to the right, which long chord bears North 79° 03' 43" East, 501.21 feet, an arc distance of 519.52 feet; thence South 74° 26' 56" East, 491.93 feet; thence along the arc of a 165.63 foot radius curve to the left, which long chord bears North 50° 43' 03" East, 270.80 feet, an arc distance of 317.02 feet to centerline station 170+13.42, which points bears South 80° 41' 38 West, 778.89 feet and South 4° 07' 00" East, 106.93 feet from the northeast corner of said Section 10.

Basis of Bearings: Washington Coordinate System, South Zone.

The widths in feet of the right-of-way referred to above are as follows:

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
64+08.69		92.9
64+75	55	
65+00		112
66+26.37	109	
66+35		45
67+30	86	
67+30	52	
67+75	78	
68+20		187
68+85.75	65	
69+80.65	61	
69+82.42	111	
70+10		221
70+75.67	66	
70+75.67	111	
71+15		120
71+38.82	111	
71+55		55
71+60	75	
72+25	112	
72+75		157
73+00	114	
74+05	67	
74+95		277
75+25	88	
76+95		311
77+70	93	
79+00	60	
79+20		213
80+15		216
81+10	70	
81+35	98	71
82+00		74
82+30	95	
82+68.35	90	
82+20	83	
84+00		53
84+35	67	
84+45	70	
84+85		147
86+44.36	6	
86+80		287
88+80	59	
89+45		273
90+00	46	
90+90	54	

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
91+38.52	53.37	
92+25		71
94+00	50	
94+30		62
94+80		90
96+05		84
97+00	51	
97+65		120
99+00		114
99+64.80	40	
100+10		135
100+95		124
101+45		178
101+85		271
103+10		255
103+63.62	28.16	
104+10		282
105+35		200
106+00		45
106+25		45
106+58.93	24	
106+70		116
107+30		116
108+00		57
108+90		124
109+90		54
110+39.74	43	
110+70		180
111+25	53	
111+60	40	
111+85		148
112+10	55	
112+85	64	
113+20		205
114+00	55	76
114+90		173
115+00	98	
116+05	62	
116+55.21		143
116+90	62	
117+80	123	
117+87.87		85
118+90		90
120+05		41
120+30	84	
121+00	88	132
121+60	153	
122+15		40

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
122+30	153	
122+70		40
123+50	45	145
124+20		170
125+00	148	
125+60	160	
127+30		112
127+50	110	
130+15		106
130+65		50
131+40	110	
131+75	60	
132+00		79
132+70		63
133+45	71	
134+00		62
134+55	44	
134+77.10	93.62	
135+33.42	46.52	
135+90	62	
135+53.68		52.16
136+51.86		89.45
136+55	62	
137+20.31		53.80
137+65	42	
139+90		53
141+50	42	
141+75		51
142+40	42	
143+00		87
143+20	54	
144+85	55	
146+30		68
147+45	59	
149+00	49	71
149+50		50
149+90	64	
150+90		50
151+00	40	
151+90	74	
152+00		71
153+20	37	
153+30		46
154+10	66	
155+40		69
155+60	65	
157+20		43
158+35	66	

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
159+00		51
160+00	64	50
160+23.24	61	
160+89.39	44	
161+02.32		49.16
161+25		30
161+75	35	
162+04.47	30	30
166+96.40	30	
166+96.40	50	
167+27.55		33.51
167+91.43	30	
168+69.23		152.60
169+41.86	30	
170+13.42		

A strip of land of varying widths over and across Section 18, Township 17 North, Range 6 West of the Willamette Meridian and Sections 13, 14 and 15, Township 17 North, Range 7 West of the Willamette Meridian, all in Grays Harbor County, Washington. Said strip of land lying on each side of the following described centerline:

Beginning at a point in the Access Railroad centerline, which point bears North 75° 12' 54" West, 1104.40 feet from the east quarter corner of said Section 18, said point of beginning being Access Railroad centerline station M 18+97.31; thence South 28° 40' 00" West, 586.00 feet; thence along the arc of a 650.00 foot radius curve to the right, which long chord bears South 74° 50' 00" West, 937.77 feet, an arc distance of 1047.49 feet; thence North 59° 00' 00" West, 3609.21 feet; thence along the arc of a 2000.00 foot radius curve to the left, which long chord bears North 78° 41' 47" West, 1348.14 feet an arc distance of 1375.06 feet; thence South 81° 36' 27" West, 2298.04 feet; thence on a 1000.00 foot radius curve to the right, which long chord bears North 83° 11' 47" West, 524.25 feet, an arc distance of 530.45 feet; thence North 68° 00' 00" West, 590.98 feet; thence on a 1000.00 foot radius curve to the left, which long chord bears North 83° 38' 11" West, 539.06 feet, an arc distance of 545.81 feet; thence South 80° 43' 39" West, 2343.39 feet; thence on a 1500.00 foot radius curve to the left, which long chord bears South 76° 54' 17" West, 200.01 feet, an arc distance of 200.16 feet; thence South 73° 04' 55" West, 603.77 feet, thence on a 1400.00 foot radius curve to the right, which long chord bears North 82° 26' 05" West, 1160.41 feet, an arc distance of 1196.49 feet; thence North 57° 57' 04" West, 1539.58 feet to the Access Railroad station M183+63.74, said point is on the centerline of the Union Pacific Railroad Company right-of-way and said point bears South 57° 51' 26" West, 1606.73 feet from the northeast corner of Section 15, Township 17 North, Range 7 West of the Willamette Meridian.

Basis of Bearings: Washington State Coordinate System, South Zone.

The widths in feet of the right-of-way referred to above are as follows:

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
M 21+08.42		224.0
M 23+10.00		193.5'
M 23+57.96		176.9
M 24+85.47	164	
M 25+40		119
M 26+10		79
M 26+90		50
M 26+65.19	164	
M 26+75	110	
M 27+45	108	
M 27+60	52	
M 28+60	120	
M 29+10		97
M 29+45	196	
M 30+00	211	
M 30+30	212	
M 30+50		112
M 31+10		104
M 31+25	165	
M 31+95	50	
M 32+00		64
M 32+20	84	96
M 32+45		96
M 32+60	50	
M 32+70		70
M 33+40	135	
M 33+65	133	121
M 33+90	120	
M 34+25		133
M 34+75	200	
M 35+15.52	223.23	
M 35+25.35	208.10	
M 36+45	240.9	
M 37+00	160	
M 38+40	110	
M 38+75		79
M 39+50		93
M 41+50	111	
M 43+90	109	
M 44+10		82
M 45+10	95	
M 45+89.66	95	
M 44+90.66	153.51	
M 45+21.19	205.16	
M 45+90	205	
M 47+40		69
M 48+70	245	
M 49+30		72
M 49+45	230	
M 49+70		148
M 50+00	170	
M 50+50	85	
M 50+65		190
M 51+50		132
M 51+00		70
M 53+00	56	
M 53+90		71
M 54+00	57	
M 54+90		91
M 55+41.42	97.2	
M 56+00		96

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
M 56+48.89		83.4
M 56+50	128	
M 57+05		69
M 58+10	138	81
M 58+35	56	
M 58+50	125	
M 58+75	65	
M 58+90		119
M 59+87.14	73.9	
M 60+00		144
M 61+09.03		140
M 63+50	59	
M 64+10		132
M 64+80		81
M 64+90	165	
M 65+60		67
M 66+40	164	
M 67+00	140	
M 67+10.37		81
M 67+90	169	
M 68+20		113
M 68+80	138	
M 69+15		50
M 70+00	160	
M 70+90.94	133.3	
M 71+55	150	
M 73+95		199
M 74+20	149	
M 74+65	50	
M 75+01.37	54.7	
M 75+85	68	
M 75+89.29		231.3
M 76+89.97		229.7
M 78+15	50	
M 78+50	133	
M 79+04.66		183.8
M 79+40	138	
M 79+65		236.3
M 79+90	135	
M 80+30		235
M 80+90	50	
M 81+35		199
M 82+65	50	
M 83+05	73	
M 83+10		50
M 83+90		197
M 83+95	50	
M 84+55		236

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
M 85+45		259
M 86+15	50	
M 87+10		254
M 87+85	64	
M 88+09.04		233
M 88+60.18	52.5	
M 89+15		158
M 89+55		50
M 90+75	88	
M 91+20	182	
M 92+90		50
M 93+60		60
M 93+60		140
M 94+50		190
M 94+85	178	
M 95+45		176
M 96+65	204	
M 97+35		175
M 98+70	195	
M 99+25	210	
M 99+40	253	
M 99+70	254	
M 100+25	174	
M 100+30		100
M 100+60	161	
M 100+70		50
M 102+20	167	
M 105+00	190	
M 105+05		66
M 105+34.59		50.2
M 105+66.41		53.7
M 105+85	183	
M 106+10	80	
M 106+15		82
M 106+85	65	
M 107+00		102
M 107+95		77
M 109+00	86	
M 110+05	50	
M 110+40	138	
M 110+80	137	
M 110+90	66	
M 111+75		86
M 111+90	64	
M 112+27.77		95.1
M 112+85	183	
M 113+47.64		106.1
M 114+05	190	

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
M 114+40.22	160.1	
M 115+20		114
M 115+29.95	84	
M 115+43.04		124.8
M 115+48.14		127.2
M 115+70	50	
M 116+05		154
M 116+30		120
M 116+89.66		153.8
M 117+75		158
M 117+89.83	85.9	
M 118+25		206
M 118+80		241
M 118+84.57	86.9	
M 119+55		243
M 119+80	104	
M 120+00		182
M 121+03.07	129.4	
M 121+70	145	
M 121+80		228
M 122+35		230
M 123+64.53	150.8	
M 124+00		165
M 124+15	147	
M 125+05	124	
M 125+85	121	
M 126+30		155
M 127+82.24	141.2	
M 128+90		108
M 130+10		128
M 130+25	133	
M 131+95		130
M 134+05	126	
M 134+30		165
M 136+95		185
M 137+10	129	
M 137+75		202
M 139+10	117	
M 140+00		223
M 141+25	95	
M 141+83		223.5
M 142+00.92		222.1
M 142+35	68	
M 142+70	195.6	
M 142+60	243	
M 142+30	274	
M 142+53.25	295.2	
M 142+74.83	295.7	

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
M 142+85	285	
M 147+10.34		180.6
M 147+70	232	
M 148+14.24		171.4
M 148+19.29		221.1
M 149+00	232	
M 149+00.13		211.4
M 150+14.54		197.3
M 150+20	199.5	
M 150+50	164	
M 151+18.70		181.8
M 151+27.17		231.1
M 151+30	139	
M 152+22.37		213.6
M 153+35	56	
M 153+41.81		190.8
M 153+91.43	157.6	
M 154+00	173	
M 155+20	156	
M 155+34.61	141.4	
M 156+14.58		150.4
M 156+20	56	
M 157+15	77	
M 159+15	75	
M 160+00	54	
M 160+75	93.6	
M 162+59.39	191.1	
M 163+25	236	
M 164+01.19	207.8	
M 165+13	176	
M 165+45.37		115.8
M 165+65	145.2	
M 166+35	101	
M 167+97.49	96.1	
M 168+43.07		102.2
M 169+03.75		96.1
M 169+05	154	
M 170+45	197	
M 171+00	142	
M 172+00	123	
M 173+30	116	
M 174+30	78	
M 179+15	72	
M 182+72.05	149.6	
M 183+30.32	46.66	
955+15.2=M182+72.05	158	
951+65.0	187	
951+00.0	50	

A strip of land of varying widths over and across Sections 15 and 16 township 17 North, Range 7 West of the Willamette Meridian, Grays Harbor County, Washington:

Said strip of land lying on each side of the following described centerline of Minkler County Road as it now exists.

Beginning at the intersection of the centerline of said Minkler Road with the west line of said Section 16, which point bears South 1° 40' 18" West, 712.70 feet from the northwest corner of said Section 16, said point of beginning being hereby designated as Survey Centerline Station 0+00; thence along the arc of a 954.93 foot radius curve to the right which long chord bears North 54° 16' 58" East, 229.80 feet, an arc distance of 230.35 feet; thence along the arc of a 358.10 foot radius curve to the right which long chord bears North 79° 46' 06" East, 228.14 feet, an arc distance of 232.19 feet; thence along the arc of a 1145.92 foot radius curve to the right which long chord bears South 75° 59' 42" East, 226.10 feet, an arc distance of 226.47 feet; thence South 70° 20' 00" East, 598.28 feet; thence along the arc of a 1432.39 foot radius curve to the left which long chord bears South 71° 59' 18" East, 82.74 feet, an arc distance of 82.75 feet; thence along the arc of a 2291.83 foot radius curve to the right which long chord bears South 70° 24' 18" East, 258.93 feet, an arc distance of 259.07 feet; thence South 67° 10' 00" East, 121.46 feet; thence along the arc of a 1909.86 foot radius curve to the right which long chord bears South 64° 41' 21" East, 165.12 feet, an arc distance of 165.17 feet; thence along the arc of a 716.20 foot radius curve to the left which long chord bears South 69° 39' 58" East, 185.84 feet, an arc distance of 186.36 feet; thence along the arc of a 1145.92 foot radius curve to the left which long chord bears South 82° 38' 37" East, 220.58 feet, an arc distance of 220.92 feet; thence South 88° 10' 00" East, 456.00 feet; thence along the arc of a 954.93 foot radius curve to the right which long chord bears South 85° 45' 00" East, 80.53 feet, an arc distance of 80.55 feet; thence South 83° 20' 00" East, 244.83 feet; thence along the arc of a 2864.79 foot radius curve to the left which long chord bears South 84° 27' 25" East, 112.37 feet, an arc distance of 112.37 feet; thence along the arc of a 2864.79 foot radius curve to the right which long chord bears South 83° 32' 25" East, 204.00 feet, an arc distance of 204.04 feet; thence South 81° 30' 100" East, 1181.70 feet; thence along the arc of a 3819.72 foot radius curve to the left which lung chord bears South 82° 57' 30" East, 194.42 feet, an arc distance of 194.45 feet; thence South 84° 24' 00" East, 662.61 feet; thence along the arc of a 2864.79 foot radius curve to the right which long chord bears South 80° 50' 00" East, 358.10 feet, an arc distance of 358.33 feet; thence South 77° 15' 00" East, 209.98 feet; thence along the arc of a 716.20 feet radius curve to the left which long chord bears South 83° 05' 00" East, 145.58 feet, an arc distance of 145.83 feet; thence South 88° 55' 00" East, 310.38 feet; thence along the arc of a 2291.83 foot radius curve to the right which long chord bears South 86° 01' 19" East, 231.47 feet, an arc distance of 231.57 feet; thence along the arc of a 1145.92 foot radius curve to the left which long chord bears South 87° 17' 00" East, 166.09 feet, an arc distance of 166.23 feet; thence along the arc of a 954.93 foot radius curve to the right which long chord bears South 85° 48' 10" East, 187.57 feet, an arc distance of 187.87 feet; thence South 80° 10' 00" East, 163.38 feet; thence along the arc of a 318.31 foot radius curve to the left which long chord bears South 87° 54' 42" East, 85.79 feet, an arc distance of 86.06 feet; thence along the arc of a 2291.83 foot radius curve to the right which long chord bears North 87° 55' 20" East, 286.10 feet, an arc distance of 286.29 feet; thence along the arc of a 716.20 foot radius curve to the right which long chord bears South 84° 40' 11" East, 95.66 feet, an arc distance of 95.73 feet; thence along the arc of a 358.10 foot radius curve to the left which long chord bears South 88° 47' 35" East, 99.09 feet, an arc distance of 99.09 feet, an arc distance of 99.41 feet; thence along the arc of a 110.18 foot radius curve to the left which long chord bears North 45° 53' 06" East, 133.75 feet, an arc distance of 143.72 feet; thence along the arc of a 358.10 foot radius curve to the left which long chord bears North 3° 54' 32" West, 154.09 feet, an arc distance of 155.31 feet; thence North 16° 20' 00" West, 72.08 feet to Survey Centerline Station 81+71.74, which point bears South 62° 35' 42" East, 2597.96 feet from the northeast corner of said Section 16.

Basis of Bearings: Washington State Coordinate System, South Zone

The widths in feet of the right-of-way referred to above are described as follows:

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
7+27.09	30.0	
9+54.83	71.7	
12+40.00	69.1	
15+00.00	101.1	
18+10.00	122.5	
20+00.00		30.0
21+02.10		47.5
21+65.00	42.8	
22+63.33		30.0
24+30.00		30.0
25+60.00	46.2	
25+60.00	56.2	
25+85.00		44.3
26+90.00	53.8	
27+45.00		49.1
27+45.00		39.1
27+77.51		40.2
27+77.51		30.0
27+77.56	32.7	
27+77.56	30.0	
68+10.96		20.0
68+10.84		50.1
69+90.47		48.2
70+04.24		43.2

CENTERLINE STATION	DISTANCE LEFT	DISTANCE RIGHT
70+13.78	20.0	47.0
71+28.46	27.1	
71+54.42		
72+45.00		47.5
72+55.00	23.8	
74+15.00	51.6	
74+67.87		42.9
74+69.61		20.0
74+75.02	54.2	
74+72.57	20.0	

All that portion of the following described properties lying north of the Union Pacific Railway Company right-of-way and south and west of the Chehalis River:

a. That part of Government Lot 2, 3 and the east half of 7, Section 15, Township 17 North, Range 7 West of the Willamette Meridian, Grays Harbor County, Washington, described as follows:

Beginning at a point South 60° East, 728 feet from the northwest corner of said Section 15; thence South 42° 15' East, 927 feet; thence South 64° 28' East, 350 feet; thence Southeasterly 420 feet, more or less, to the northwest corner of the east half of Government Lot 7; thence South 1,320 feet, more or less, along the centerline of said Lot 7 to its south line; thence East 1,980 feet to the southeast corner of the southwest quarter of the northeast quarter; thence North 2,400 feet, more or less, to the south bank of the Chehalis River; thence westerly along said south bank to the true point of beginning together with the accretions to said Government Lots from the action of the Chehalis River; EXCEPT any decretions therefrom caused by the action of the Chehalis River; EXCEPT the Oregon-Washington Railroad and Navigation Company's Railroad right-of-way; EXCEPT the southwest quarter of the northeast quarter of said Section 15; EXCEPT that part of the east half of Government Lot 7 lying southerly of the private road known as Barnard Road; EXCEPT that portion conveyed to Elbert White by deed recorded April 14, 1944, as Auditor's File No. 436490, more particularly described as follows:

Beginning at the point of intersection of the south line of the Oregon-Washington Railroad and Navigation Company's Railroad right-of-way with the east line of the Private Road (known as Barnard Road); thence South 150 feet; thence East 1,250 feet; thence North to the south line of Army Road; thence northwesterly along said south line of Army Road to the south line of said railroad right-of-way; thence westerly to the point of beginning; and EXCEPT County Roads.

b. That part of Government Lot 4 lying southerly of the Chehalis River, and all of Government Lots 5 and 6 in Section 15, Township 17 North, Range 7 West of the Willamette Meridian, Grays Harbor County, Washington, EXCEPT Union Pacific Railway right-of-way, EXCEPT County roads, and EXCEPT that portion of said premises conveyed to the United States of America by instrument recorded January 7, 1958, in Volume 382 of Deeds, page 457, as Auditor's File No. 29274.

c. Government Lot 4 in Section 10, Township 17 North, Range 7 West of the Willamette Meridian; EXCEPT Roads; ALSO, that portion of Government Lot 4, if any, lying North of the Chehalis River in Section 15, Township 17 North, Range 7 West of the Willamette Meridian; ALL situate in the county of Grays Harbor, State of Washington.

A tract of land located in the Northwest 1/4 of Section 16, Township 17 North, Range 7 West of the Willamette Meridian Grays Harbor County, Washington and more particularly described as follows:

Beginning at a point that bears South 1° 40' 18" West along the west line of said Section 16, 302.63 feet from the northwest corner thereof; thence South 1°40' 18" West along said west line, 96.91 feet to a point on the northerly line of the Union Pacific Railway right-of-way; thence South 83° 41' 54" East along said railway right-of-way, 388.99 feet; thence North 70° 01' 01" West, 408.41 feet to the point of beginning.

A tract of land located in the East 1/2 of Sections 8 and 17, Township 17 North, Range 7 West of the Willamette Meridian, Grays Harbor County, Washington and more particulary described as follows:

Beginning at a point that bears South 1° 40' 18" West along the east line of said Section 17, 302.63 feet from the northeast corner thereof; thence South 1° 40' 18" West along said east line, 96.91 feet to a point of the northerly line of the Union Pacific Railway right-of-way; thence North 83° 41' 54" West along said railway right-of-way, 102.37 feet; thence North 52° 31' 12" West, 688.02 feet to the west line of the east 40 rods of Government Lot 5 in said Section 8; thence North 1°40' 18" East along said west line, 346.34 feet to the water line of the Chehalis River; thence North 88° 00' 00" East along said water line, 8.99 feet; thence South 73° 00' 00" East along said water line 37.74 feet; thence South 52° 31' 12" East, 253.04 feet; thence South 37° 28' 48" West, 200.00 feet; thence South 52° 31' 12" East, 526.04 feet; thence South 70° 01' 01" East, 105.09 feet to the point of beginning.

A tract of land located in the Southeast 1/4 of Section 8, Township 17 North, Range 7 West of the Willamette Meridian, Grays Harbor County, Washington and more particulary described as follows:

Beginning at a point on the west line of the east 40 rods of Government Lot 5, said point being North 88° 09' 54" West, 660.00 feet and North 1° 40' 18" East, 9.38 feet from the southeast corner of said Section 8; thence North 52° 31' 12" West, 142.38 feet; thence South 37° 28' 48" West, 80.00 feet; thence North 52° 33' 12" West, 610.00 feet; thence North 38° 10' 00" East, 30.26 feet to the water line of the Chehalis River; thence easterly along said water line, the following courses:

South 51° 10' 00" East, 30.31 feet;
South 67° 10' 00" East, 92.20 feet;
South 77° 30' 00" East, 83.53 feet;
North 88° 00' 00" East, 106.36 feet;
South 81° 30' 00" East, 84.48 feet;
North 83° 10' 00" East, 97.72 feet;
South 86° 30' 00" East, 78.28 feet;
North 88° 00' 00" East, 82.05 feet;

To said west line of the east 40 rods of Government Lot 5; thence South 1° 40' 18" West, 346.34 feet to the point of beginning.

Basis of Bearings: Washington Coordinate System, South Zone.

ATTACHMENT II

EXCAVATION AND EROSION CONTROL MEASURES

I. INTRODUCTION

A. Objective

The objective of the erosion and sediment control measures to be implemented throughout the construction of Washington Public Power Supply System Nuclear Projects Number 3 and 5 is to insure that the effluent discharged from the plant area does not violate state and federal effluent and water quality standards as stated in the Council's April 26, 1976 NPDES permit as amended and elsewhere as a result of site preparation and construction of the projects.

II. ON-SITE EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

A. Construction Run-off Control

1. In order to maintain proper control of runoff from the construction site during all phases of construction, two distinct erosion and sediment control systems will be implemented. The first on-site construction activity will include in-

stallation of the Temporary Construction System, described in Section B. below, to control runoff from all disturbed areas prior to the completion of grading. As each area reaches its final grade, control of runoff will be assumed by the Permanent Construction System described in Section C.

2. Erosion control methods commonly employed will be used for both the temporary and permanent construction systems. Approximately 260 acres (85% of the site) will be constructed at about 2% slope, with local deviations to minimize erosion but assure drainage. The excavation and fill activities will proceed with the objective of creating and maintaining this slope wherever possible. The remaining 15% of the site consists of the cut and fill slopes to the west, south, and east of thyplant island. These slopes will be constructed at a 3.1 (horizontal-to-vertical) grade. At 25 foot vertical intervals a horizontal berm will be constructed with a ditch to direct runoff from each level of the slope to a retention basin. Ditches must be placed at every berm to limit the distance water can flow down the slopes and cause erosion.

3. The length of time soil will be exposed to the erosive energy of rainfall will be minimized. The cut and fill slopes will bear no construction traffic after their completion, making it possible to cover the soil and seed these slopes with quick-growing grass early in the construction process. Shrubery may also be planted in accordance with the final landscaping plan. Erosion control measures will include shielding and/or binding the soil where slope stabilization is necessary.

4. Areas that experience heavy construction traffic will be stabilized and protected. Construction roads and parking areas will be covered with a coarse base material and compacted. Other areas disturbed by construction will be shielded and seeded to reduce erosion.

5. Drainage ditches used will vary in size depending upon the volume of water and rate of flow each ditch is required to handle. Ditches will be lined with grass, rip rap, or other suitable material to prevent erosion of the ditch sides if needed. Energy dissipators will be installed at the outfall of ditches where necessary.

B. Temporary Construction System

1. The Temporary Construction System will collect runoff from the construction area during the excavation and fill activities. This temporary control system will consist of collection ditches and/or berms, a large retention pond at the north end of the main plant area, and local erosion and/sediment control programs where needed. The collection structures will be reconstructed to maintain the integrity of the erosion and sediment control system when the excavation or fill activities require such changes.

2. The main retention pond will be designed, constructed, and operated to hold runoff from the site construction area due to a 10 year, 24 hour rainfall event long enough to decrease the amount of suspended solids, settleable solids, and pH to effluent limits, inclusive of the quantity of sediments that will accumulate in the retention basin. Pond discharge structures will route released effluent to points identified in the Council's April 26, 1976, permit as amended. Energy dissipators will be used to insure that the natural stream or riverbed will minimally be disturbed.

3. The collection system for the main retention pond will collect runoff at the perimeter of the site construction area. The runoff will be routed northward to the main retention pond. This perimeter collection system will be established at the lowest possible elevation permitted by the filled retention pond water elevation. In certain plant areas it is not possible to route the runoff from the construction areas to the planned retention pond. Where this occurs, localized control structures will be created. These structures will consist of berms to isolate the construction area from surrounding undisturbed areas and berm ditches to collect the runoff from construction areas. Runoff so collected will be processed by retention ponds outside of the fill area so that applicable effluent limits will at all times be met.

4. After the permanent construction system has been constructed, the main retention pond will be filled with earth and become part of the plant laydown area. The temporary collection system will either become a part of the Permanent Construction System or be filled.

C. Permanent Construction System

1. The permanent construction system utilizes multiple

retention ponds to retain water runoff until its quality is acceptable for release.

2. Extensive use of diversion ditches divides the 300 acre site into several distinct drainage areas and directs the runoff to the ponds.

3. The use of multiple retention ponds allows each drainage area to act independently of the other. In the event a single pond requires maintenance, such activity will be done with minimizing effect on other ponds.

4. The retention ponds must be designed, constructed, and operated to hold all runoff from a 10 year, 24 hour rainfall. Additional depth will be provided to handle all settled solids accumulated over the construction period, lessening the need for periodic cleaning of the pond bottoms.

5. Inflow structures to each pond will be provided to minimize any turbulent flow or churning that may disrupt the settling process. These structures will be equipped with baffles.

6. Each pond will have a discharge structure designed, constructed and operated to hold the runoff in the

basin as long as is necessary to achieve required effluent and water quality. The discharged structure will carry the water to points identified in the Council's April 26, 1976, NPDES permit as amended and discharge it in such a manner that the stream will be used where necessary to eliminate turbulence or excessive velocity of water flow.

7. In addition to the use of retention ponds and diversion ditches in the permanent system, best methods will be employed where possible to shield exposed soil. As each area reaches its final grade, the soil will be covered, and seeded. The type of treatment used will be dependent upon the slope of the land, size of the area, and amount of construction activity.

III. OFF-SITE EROSION AND SEDIMENT CONTROL

Several facilities will be constructed at locations not in the immediate project area that will not fall under the control of the temporary or permanent erosion and sediment control system. Some special control programs for these facilities are described in the section below:

A. Barge Facility

1. The barge facility will be located on the south

bank of the Chehalis River as far upstream as possible without dredging.

2. The barge facility construction area will be isolated from its surroundings with berms and/or ditches and runoff from undisturbed areas will be routed around the construction area. Runoff from the construction are will be collected and treated in a retention pond. The barge slip will be partially excavated behind an in-place natural earth barrier. Excavation occurring in the river will be limited to that required to obtain clearance for barge access to the slip. Spoil from these excavation activities will be disposed of in an area controlled by a retention pond. Construction area runoff and excavated spoil will be retained for settlement so that effluent and water quality requirements will be met when discharging. Upon completion of the construction activity, exposed earth will be revegetated. All runoff control facilities must be designed, constructed, and operated to treat the volume of runoff associated with a 10 year 24 hour rainfall event so that all discharges meet applicable effluent and water quality limitations.

B. Roads and Railroads

1. Access to the plant area will be by an asphalt road from the east and a combination railroad/ construction road from the west.

2. The installation of the East Access Road will involve the construction of 10,000 ft. of new road between the plant area and the existing terminus of Lambert Road and the upgrading of the full length (5000 ft.) of Lambert Road, and the upgrading of Workman Creek Road (3000 ft.) from its juncture with Lambert Road to the South Elma Bridge. The West Access Railroad will run approximately 21,000 feet from its junction with the existing Union Pacific tracks in the vicinity of Elizabeth Creek to the plant area. The South Bank Road will be improved from its terminus to the barge slip area. A haul road from the barge slip will be constructed to connect the barge slip to the South Bank Road.

3. The methods used for erosion and sediment control will be the same for both access facilities. A system of collection ditches and/or berms will be used to collect the runoff from both fill and cut areas. This runoff will then be retained to reduce the amount of suspended solids. Upon com-

pletion of each cut and fill area the exposed soil will be shielded and revegetated to achieve permanent slope stabilization. Runoff from undisturbed areas will be collected by berm ditches and diverted past the road/railroad facilities through culverts. All runoff control facilities must be designed, constructed and operated to treat the runoff associated with a 10 year 24 hour rainfall event so that all discharges meet state and federal effluent and water quality standards.

C. Makeup, Plant Construction and Potable Water, and Blowdown Facilities

1. The makeup facility will consist of a group of installations to remove the water from the ground and a pipeline to take the water from its source to the plant area. The makeup pipeline will be placed in the railroad embankment from the plant area to approximately the intersection of Elizabeth Creek and the common subgrade. Beyond this point a system of pipeline, pumps, and either wells or Ranney well Collectors will be installed in a large flood plain between the Union Pacific Railroad tracks and the Chehalis River.

2. The plant construction and potable water supply will consist of wells and a pipeline to take the water from its source to the plant area.

3. The blowdown facility runs between the plant area and the Chehalis River. A pipeline will run from the plant cooling towers to the river, at which point a submerged diffuser will be extended from approximately forty-five to seventy-five feet into the river. The submerged diffuser pipe will be buried beneath the riverbed and will have ports projecting approximately one foot above the riverbed.

4. The discharge system pipe must be buried at sufficient depth to assure its integrity and shall be covered with a layer of natural, clean materials, level with the bed of the river. Excavated material must not be placed, held, or stockpiled in the river while being retained for later replacement over the pipe. Any concrete outlet structure must be isolated from the river during all placing and curing. All spoil must be disposed of on shore. Effluent limitations and water quality criteria must be met. Sediment-trapping barriers will be placed around excavation areas.

5. Any portion of the water supply installations for removing water from the ground that are grouped in close enough proximity will have common erosion and sediment control features. All other water supply installations will have individual erosion and sediment control features. The construction areas will be isolated from the surrounding undisturbed areas by ditches and/or berms. Runoff from undisturbed areas will be routed around the construction areas. The construction area runoff will be collected by ditches and/or berms and released in a controlled manner in compliance with applicable requirements. Ditches and berms must be designed, constructed, and operated to treat runoff associated with a 10 year 24 hour rainfall event so that all discharges meet state and federal water quality and effluent standards.

6. All pipelines will have continuous erosion and sediment controls that will travel with the pipe laying operation. A temporary diversion berm will be placed around the pipe laying operation which will route runoff from undisturbed areas past the pipe laying areas. All runoff will be collected and held within the construction area until discharge from the temporary diversion berm. Upon completion of pipe laying activities, the ditch will be

backfilled as soon as possible. The soil will then be treated and revegetated. Ditches and berms must be designed, constructed, and operated to treat runoff associated with a 10 year 24 hour rainfall event so that all discharges meet state and federal water quality and effluent standards.

IV. EROSION AND SEDIMENT CONTROL MONITORING

A. Implementation

1. Inspecting, testing and monitoring the Erosion and Sediment Control System is to be part of the implementation.

2. Retention basins will be periodically monitored as required in the NPDES Permit, Attachment III to this Certification Agreement.

3. In addition to monitoring each retention basin, the entire system of erosion control structures and ditches will be inspected periodically to insure they are kept in proper condition.

4. In the event that improvements are necessary, the procedures employed for system improvement will be

determined by the Environmental Engineer, subject to Council approval, to adhere to best practicable procedures.

V. MISCELLANEOUS

All sedimentation and erosion control measures must equal or exceed standards described by the applicant in the course of the NPDES hearings commenced on April 10, 1975, and the site certification hearings commenced on August 5, 1975, in the matter of Application 73-2.

All sedimentation and erosion control measures must equal or exceed standards stated in the Council's Site Certification Agreement to which this order is attached, or in the Council's April 26, 1976, NPDES permit issued in the matter of application 73-2.

Standards stated in sections III and IV of this erosion and sediment control plan in no way indicate Council determination to issue NPDES permits authorizing any discharges from the facilities identified therein.

Permit No. WA-002496-1
Issuance Date:
Expiration Date:

NATIONAL POLLUTANT DISCHARGE ELIMINATION
SYSTEM WASTE DISCHARGE PERMIT

State of Washington
Thermal Power Plant Site Evaluation Council
Olympia, Washington 98504

In Compliance With the Provisions of
Chapter 155, Laws of 1973, (RCW 90.48) as Amended

and

The Federal Water Pollution Control Act Amendments of 1972,
Public Law 92-500

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
3000 George Washington Way
Richland, Washington 99352

Plant Location:	Section 17 T. 17N, R 6W W.M. South of Satsop Grays Harbor County, Washington	Receiving Water: See Page 2 Discharge Location: See Page 2
Industry Type:	Nuclear Steam Electric Generating Plant (WPPSS Nos. 3 & 5)	Waterway Segment No.: See Page 2

is authorized to discharge in accordance with the special and general conditions which follow.

APPROVED: April 12, 1976

AMENDED: April 26, 1976

AMENDED: July 12, 1976

AMENDED: July 26, 1976

Thomas C. Lacer
Acting Chairman
Thermal Power Plant Site
Evaluation Council

SPECIAL CONDITIONS

S.1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning with the issuance of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge effluents from Outfall Discharge Serial Number 001 subject to the following limitations and monitoring requirements:

OUTFALL IDENTIFICATION (1)

OUTFALL	RECEIVING WATER	DISCHARGE LOCATION	WATER SEGMENT NO.
001	Chehalis River	Lat. 46°58'26"N Lo. 123°29'19"W	10-22-12
002	Fuller Creek	Lat. 46°58'22"N Lo. 123°27'43"W	10-22-12
003	Workman's Creek	Lat. 46°57'27"N Lo. 123°27'49"W	10-22-12
004	Fuller Creek	Lat. 46°57'55"N Lo. 123°28'27"W	10-22-12
005	Fuller Creek	Lat. 46°58'1" N Lo. 123°28'20"W	10-22-12
006	Fuller Creek	Lat. 46°58'6" N Lo. 123°28'9" W	10-22-12
007	Fuller Creek	Lat. 46°58'12"N Lo. 123°28'9" W	10-22-12
008	Fuller Creek	Lat. 46°58'22"W Lo. 123°47'21"W	10-22-12
009	Chehalis River	Lat. 46°58'30"N Lo. 123°27'15"W	10-22-12
010	Purgatory Creek	Lat. 46°58'20"N Lo. 123°27'19"W	10-22-12

(1) No pollutant discharge from any construction activity or operation associated with this project is authorized from any outfall other than those ten outfalls identified above.

A. LOW VOLUME WASTE SOURCES PORTION OF DISCHARGE SERIAL NUMBER 001 PER UNIT(1)

PARAMETER	EFFLUENT LIMITATIONS (2)		MONITORING REQUIREMENTS(3)	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Total Suspended Solids (lb/day)	70	12.5	3 times per week	Grab
(mg/l)	100			
pH	Between 6.5 and 8.5 at all times		3 times per week	Grab
Oil and grease (lb/day)	10.5	6.3	weekly	Grab
(mg/l)	15			
Flow (GPD)(4)	**8.4 x 10^4**	**5. x 10^4**	Each discharge	Log tank contents prior to discharge

Note (1) Permittee shall mix effluent from this source with cooling water blowdown when either cooling tower is operational.

Note (2) When neither cooling tower is operational, low volume wastes must be retained.

Note (3) Permittee shall monitor the effluent from the low volume waste sources for TSS, pH, oil and grease and flow volume prior to mixing with cooling tower blowdown or other in-plant streams.

Note (4) Permittee shall discharge from this source only on an intermittent basis.

B. RECIRCULATED COOLING WATER BLOWDOWN PORTION OF DIFFUSER DISCHARGE SERIAL NUMBER 001 PER UNIT

PARAMETER	EFFLUENT LIMITATIONS(1)		MONITORING REQUIREMENT	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Temperature	Note (2)		Continuous	Instantaneous
Free Available Chlorine (lb day)	1.4	.5	Continuous	Instantaneous
(mg/l)	0.0013			
pH	Between 6.5 and 8.5 at all times		Continuous (3)	Instantaneous
Flow (GPD)(4)	4.03×10^6	3.7×10^5	Continuous	Instantaneous
CFS	6.3			
Copper (mg/l)	0.0013		Weekly	Grab

Special Chlorine Limitation

The maximum concentration of total residual chlorine at the outfall shall not exceed 0.0013 mg/l at any time. For compliance, the discharge shall be continuously monitored and recorded at the outfall for total residual chlorine. Compliance with respect to chlorine residual will be determined by attainment of the permit limits or an anlysis showing non-detectability. (Present level of detectability is 0.002 mg/l.)

There shall be no discharge of free available chlorine nor total residual chlorine from any unit for more than two hours in any one day and there shall be no discharge of free available chlorine nor total residual chlorine from more than one unit in the plant at any one time. No discharge is defined as no detectable level of chlorine. The present level of detectability is 0.002 mg/l.

Note (1) Permittee shall monitor the effluent for temperature, free available chlorine, pH, copper and flow prior to being mixed with other inplant streams. The amperometric titration method as described in "Standard Methods For The Examination of Water and Wastewater" and in "Annual Book of Standards, Part 23, Water Atmospheric Analysis" shall be used to meet the monitoring requirements specified for free available chlorine.

Note (2) The discharge temperature of the component auxiliary cooling system water shall not exceed 65°F. The temperature of the blowdown from recirculated cooling water systems shall not exceed at any time the lowest temperature of the recirculated cooling water prior to the addition of the makeup water.

Note (3) Permittee shall include alarm systems for pH control, for chlorine residual, to provide indication of any variance from established limits.

Note (4) No discharge is permitted from this source at any time either when instantaneous river velocities are less than 1.0 feet per second at the diffuser, or when instantaneous flow volumes are less than 550 cfs.

C. METAL CLEANING WASTES PORTION OF DISCHARGE SERIAL NUMBER 001 PER UNIT

PARAMETER	EFFLUENT LIMITATIONS (1)		MONITORING REQUIREMENTS (2)	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Total Iron (lb/day)	0.42	0.17	3 times per day when discharging	Grab
Total Copper (lb/day)	0.42	0.17	3 times per day when discharging	Grab
(mg/L)	.0013			
Total Suspended Solids (lb/day)	42	5	3 times per day when discharging	Grab
(mg/L)	100			
pH	Between 6.5 and 8.5 at all times		3 times per day when discharging	Grab
Oil and Grease (lb/day)	6.3	2.5	3 times per day when discharging	Grab
(mg/l)	15			
Flow (GPD)	5×10^4	2×10^4	Each Discharge	Calculated Total Volume

Note (1) The daily values indicated are permitted for one cleaning operation only and the discharges are limited to one unit at a time. The cleaning operation discharges may be made only at times when river flow volume at the outfall exceeds 6600 cfs.

Note (2) Permittee shall monitor the metal cleaning wastes prior to their confluence with any other discharge stream emitting from the project.

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D. SANITARY SERVICE PORTION OF DISCHARGE SERIAL NUMBER 001 (1)

PARAMETER	EFFLUENT LIMITATIONS (2)		MONITORING REQUIREMENTS (3)	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Biochemical Oxygen Demand (5 day) (lb/day)	7.5	5.0	Weekly	Composite
(mg/l)	45	30		
Total Suspended Solids (lb/day)	7.5	5.0	Weekly	Composite
(mg/l)	45	30		
Fecal Coliform Bacteria	400 per 100 ml	200 per 100 ml	Weekly	Day shift grab
pH	Between 6.5 and 8.5 at all times		3 times weekly	Day shift grab
Flow (GPD)	2×10^4	2×10^4	Continuous	Instantaneous
Total Residual Chlor ine (mg/l)	0.5 mg/l maximum prior to mixing with cooling tower blowdown		3 times weekly	Grab

Note (1) When neither cooling tower is operational, sanitary wastes must be retained.

Note (2) Permittee shall mix effluent from this source with cooling water blowdown when either cooling tower is operational.

Note (3) Permittee shall monitor the effluent prior to mixing with other inplant streams.

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S.2 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS FOR OUTFALL DISCHARGE SERIAL NUMBERS 002, 003, 004, 005, 006, 007, 008, 009, and 010.

During the period beginning with the issuance of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge effluents from Outfall Discharge Serial Numbers 002, 003, 004, 005, 006, 007, 008, 009 and 010 subject to the following limitations and monitoring requirements:

1. pH factor, coliform content, dissolved oxygen, total dissolved gas content and temperature should not exceed normal area runoff amounts.

2. The presence of oil, grease, or polychlorinated biphenyl in outfall discharges will not be tolerated.

A. COLLECTED STORM RUN-OFF DRAINAGE OF DISCHARGE SERIAL NUMBERS 002, 003, 004, 005, 006, 007, 008, 009 and 010

PARAMETER	EFFLUENT LIMITATIONS(1)	MONITORING REQUIREMENTS	
		Minimum Frequency	Sample Type
Total Suspended Solids	50 (mg/l) maximum	Once per ½ day when there is discharge from the storm collector basins	Grab 2-hours after discharge begins
Settleable Solids (ml/l)	0.1		
pH	Between 6.5 and 8.5 at all times	Once per ½ day when there is discharge from the storm collector basins	Grab 2-hours after discharge begins
Flow(2)	Pond Discharges shall not cause tributary creeks to exceed their immediately previous maximum storm levels.		

Note (1) Any untreated overflow from facilities designed, constructed and operated to treat the volume of material storage runoff and construction runoff which results from a 10-year 24-hour rainfall event (5.5 inches per 24-hours) to the levels specified above shall not be subject to the limitations above for total suspended solids, settleable solids, and pH.

Note (2) All ditches must be appropriately routed to sedimentation and erosion control ponds.

GENERAL CONDITIONS

G1. Nodischarge of polychlorinated biphenyl compounds, such as transformer fluid, is permitted. No discharge of materials added for corrosion inhibition including but not limited to zinc, chromium and phosphorus is permitted.

G2. All discharges and activities authorized herein shall be consistent with the terms and conditions of this permit. Permittee is authorized to discharge those pollutants which are: (1) contained in the untreated water supply, (2) entrained from the atmosphere, or (3) quantitatively and qualitatively identified in the permit application; except as modified or limited by the special or general conditions of this permit. However, the effluent concentrations in permittee's waste water shall be determined on a gross basis and the effluent limitations in this permit mean gross concentrations and not net addition of pollutants. The discharge of any pollutant more frequently than or at a level in excess of that authorized by this permit shall constitute a violation of the terms and conditions of this permit. The discharge of liquid radioactive wastes during normal plant operations, shall be in accordance with Appendix I (10 CFR 50).

G3. Permittee shall notify the Council no later than 120 days before the date of anticipated first discharge from outfall 001 under this permit.

G4. Notwithstanding any other condition of this permit, the permittee shall not discharge any effluent which shall cause a violation of any State of Washington water quality criteria or standards as they exist now or hereafter are amended, at discharge points specified by this permit.

G5. The permittee shall provide an adequate operating staff which is qualified and shall carry out the operation, maintenance, testing and reporting activities required to assure compliance with the conditions of this permit.

G6. Notwithstanding any other condition of this permit, permittee shall handle and dispose of all solid waste material from plant operations, including settled silts, sludges, and other wastes from cooling towers, waste retention basins, or any other source in such a manner as to prevent any pollution of ground or surface waters. Further, permittee shall not permit leachate from such solid waste material to cause adverse effect on ground or surface water quality. Prior to the production of solid wastes, the permittee shall obtain Council approval of the proposed method of handling and disposing of solid wastes.

G7. Whenever a facility expansion, associated construction operation, production increase, or process modification is anticipated which will result in a new or increased discharge, or which will cause any of the conditions of this permit to be exceeded, a new NPDES application must be submitted together with the necessary reports and engineering plans for the proposed changes. No such change

shall be made until plans have been approved and a new permit or permit modification has been issued. If such changes will not violate the effluent limitations specified in this permit, permittee shall notify the Council of such changes prior to such facility expansion, production increase or process modification.

G8. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under state law or under Section 307(a) of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, this permit shall be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee shall be so notified.

G9. If, for any reason, the permittee does not comply with or will not be able to comply with any effluent limitations specified in this permit, the permittee shall:

a. Immediately take appropriate action to stop, contain, and clean up the unauthorized discharge and correct the problem.

b. Provide the Council and Department of Ecology with the following information, in writing, within 48 hours of becoming aware of such conditions:

(1) A description of the discharge and cause of noncompliance; and

(2) The period of noncompliance, including dates and times; or if not corrected, the anticipated time the noncompliance is expected to continue and steps being taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

Compliance with these requirements does not relieve the permittee from responsibility to maintain continuous compliance with the conditions of this permit or the resulting liability for failure to comply.

G10. The permittee shall at all times maintain in good working order and efficiently operate all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

G11. The diversion of any discharge or bypass of any facilities utilized by the permittee to maintain compliance with the terms and conditions of this permit is prohibited, except (a) where unavoidable to prevent loss of life or severe property damage, or (b) where excessive storm drainange or runoff (See Special Condition 2(a) Note (1).) would clearly damage any facilities necessary for compliance with the terms and conditions of this

permit. The permittee shall promptly notify the Council and the Department of Ecology in writing of each such diversion or bypass (See Special Condition 2(A) Note (2).) in accordance with the procedure specified in condition G9.

G12. Permittee shall install an alternative electric power source capable of operating all electrically powered pollution control and monitoring facilities; or, alternatively, permittee shall certify to the Council that the terms and conditions of this permit will be met in case of a loss of primary power to any pollution control or monitoring equipment by controlling production.

Monitoring

G13. Permittee shall comply with the Monitoring Program requirements set forth herein:

Monitoring results for the previous quarter shall be summarized on a monthly basis and reported on a Discharge Monitoring Report Form (EPA 3320-1), postmarked no later than the 28th day of the month following the end of the quarter. The first report is due by the 28th day of the first month following the end of the quarter in which the first discharge under this permit occurs. Duplicate signed copies of these, and all other reports required herein shall be submitted to EPA, the Council and DOE at the following addresses:

U.S. EPA Region X 1200 6th Avenue Seattle, WA 98101 Attention: Permits Branch	Dept. of Ecology Olympia, WA 98504	EFSEC Attention: Executive Secretary 820 East 5th Ave. Olympia, WA 98504

G14. The permittee shall retain for a minimum of three years all records of monitoring activities and results, including all reports of recordings from continuous monitoring instrumentations, record of analysis performed and calibration and maintenance of instrumentation. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Council.

G15. All samples and measurements made under this program shall be representative of the volume and nature of the monitored discharge.

G16. The permittee shall record such measurement or sample taken pursuant to the requirements of this permit for the following information: (1) the date, place and time of sampling; (2) the dates the analyses were performed; (3) who performed the analyses; (4) the analytical techniques or methods used; and (5) the results of the analyses.

G17. As used in this permit, the following terms are as defined herein:

a. The "daily maximum" discharge means the total pollutant discharge by weight during any calendar day and where specified, the maximum permissible pollutant concentration.

b. The "daily average" discharge means the total pollutant discharge by weight and where specified the average pollutant concentration during a calendar month divided by the number of days in the month that the respective discharges occur. Where less than daily sampling is required by the permit, the daily average discharge shall be determined by the summation of the measured daily discharges by weight divided by the number of days during the calendar month when the measurements were made.

c. "Composite sample" is a sample consisting of a minimum of six grab samples collected at regular intervals over a normal operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a normal collecting day.

d. "Grab sample" is an individual sample collected in a time span of less than 15 minutes.

G18. All sampling and analytical methods used to meet the monitoring requirements specified in this permit shall conform to regulations published pursuant to Section 304(g) of the Federal Act, or if there is no applicable procedure, shall conform to the latest edition of the following references:

a. American Public Health Association, Standard Methods for the Examination of Water and Wastewaters.

b. American Society for Testing and Materials, A.S.T.M. Standards, part 23, Water, Atmospheric Analysis.

c. Environmental Protection Agency, Water Quality Office Analytical Control Laboratory, Methods for Chemicals Analysis of Water and Wastes.

Alternative methods may be utilized if approval pursuant to 40 CFR 136 or as amended is received by permittee. The Council shall be notified of each such alternative method approved for use.

G19. Except for data determined confidential under Section 308 of the Federal Act, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Council and the Regional Administrator. As required by the Federal Act, effluent data shall not be considered confidential. Knowingly making a false statement on any such report may result in the imposition of criminal penalties as provided in Section 309 of the Federal Act.

Other Provisions

G20. After notice and opportunity for a hearing this permit may be modified, suspended or revoked in whole or in part during its term for cause including but not limited to the following:

a. Violation of any terms or conditions of this permit;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

c. A change in conditions of the receiving waters that requires either a temporary or permanent reduction or elimination of the authorized discharge;

d. If any provision of this permit is declared invalid by the courts.

G21. The permittee shall, at all reasonable times, allow authorized representatives of the Council upon the presentation of credentials:

a. To enter upon the permittee's premises for the purposes of inspecting and investigating conditions relating to the pollution of, or possible pollution of any of the waters of the State, or for the purpose of investigating compliance with any of the terms of this permit;

b. To have access to and copy any records required to be kept under the terms and conditions of this permit;

c. To inspect any monitoring equipment or monitoring method required by this permit; or

d. To sample any discharge of pollutants.

G22. Nothing in this permit shall be construed as excusing the permittee from compliance with any applicable, Federal, State or local statutes, ordinances, or regulations.

G23. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject.

G24. The permittee shall notify and afford the Council reasonable opportunity to review and comment on completed design drawings, specifications, and operational procedures for facilities including, but not limited to, the following:

a. Liquid radioactive waste discharge prevention;
b. Sanitary sewage treatment;
c. Low volume waste treatment, including frequency of discharges;
d. Construction run-off ponds;

e. Outfalls and diffusers;
f. River flow measuring stations and tidal effect measuring stations;
g. Metal cleaning waste discharges;
h. Water composition and condition stations.

The Council reserves the right to reject any drawing or procedural manuals for failure to conform to conditions stated in this permit and accompanying order. The Council further reserves the right to require amendments to any drawings or procedural manuals to produce conformance with conditions stated in this order or accompanying permit. Nothing contained herein shall be construed to relieve permittee from any liability arising from deficiencies or omissions in drawings, specifications, or operating procedures.

G25. Prior to the on-site storage of oil and hazardous waste materials the permittee shall obtain Council approval of a spill prevention containment and counter-measure plan which shall include:

a. A description of the reporting system which will be used to alert responsible facility management and appropriate legal authorities.

b. A description of preventive facilities (including overall facility plot) which prevent, contain, or treat spills an/unplanned discharges and a compliance schedule to install any necessary facilities in accordance with the approved plan.

c. A list of all hazardous materials used, processed or stored at the facility which may be spilled directly or indirectly into state waters.

Submittal of this plan in accordance with this requirement does not relieve the permittee from compliance with, nor ensure compliance with, the Federal spill prevention requirement contained in 40 CFR part 112 of the Federal Register. Oil Spill Prevention, Containment and Counter-measure Plans prepared in accordance with the above federal requirement may be used in partial fulfillment of this permit requirement.

G26. Permittee must, where applicable, continuously, efficiently, and assiduously operate all pollutant control facilities required by this permit for the duration of this certification.

G27. All necessary action must be taken to eliminate any new unforeseen surface runoff problems threatening to cause discharge of pollutants in quantities or concentrations greater than those authorized by this permit. Permittee must obtain Council approval of all such actions and must promptly notify the Council in

writing of all such problems.

G28. All construction related bid documents and construction and installation contracts must contain explicit provisions which adequately and specifically inform contractors of contractors' obligations to adhere to all sedimentation and erosion control standards set forth herein. These contracts shall be made available to the Council on request.

G29. Applicant must monitor and record on a daily basis, water conditions and composition at the water intake location, should its proposed project be authorized, to detect any variation which may have a significant effect on water quality downstream from the diffuser.

G30. The Council may order applicant to take all appropriate steps, including management of discharges, to maintain water quality conditions. Instantaneous river flow conditions, including any tidal influence, shall be continuously monitored in the vicinity of the diffuser at outfall 001.

G31. Prior to the start of construction, applicant shall submit to the Council for its review, sedimentation and erosion control plan modifications sufficient to insure that no construction runoff discharges wherein suspended solids concentrations exceed 50 mg/l are made and that water quality criteria will be met at construction runoff discharge points, except on occurrence of specific circumstances described in S 2 (a) and G11 of this permit.

G32. In addition to complying with other conditions of this permit, applicant must at all times adhere to all standards of practice and performance it committed to in the course of hearings held on April 10, 11, 15, 16 and 17, and July 24 and 25, 1975, in this matter.

G33. Empirical measurements of turbidity resulting from discharges must be made at earliest possible times for all outfall locations and as necessary thereafter; measurements taken together with measurement methods must be submitted to the Council for the Council's review and determination that water quality criteria relating to turbidity have been met; and applicant must at the earliest practicable date perform such modifications as are necessary and approved by the Council to assure that discharges made at outfall locations 001 through 010 meet state water criteria relating to turbidity without causing such discharges to exceed other limits set herein.

G34. River flow volumes, which accurately represent outflow conditions immediately above the diffuser pipe, shall be measured on a continuous and permanent recording basis by such method as may be proposed by the permittee and approved by the Council.

ATTACHMENT IV

ENVIRONMENTAL MONITORING PROGRAM

I. GENERAL DESCRIPTION

The Environmental Monitoring Program established by the Supply System will have as its objective the determination of the effects of the project on the environment. Monitored items will include the expected physical effects on land and adjacent waters, and effects on terrestrial and aquatic ecosystems as a result of project construction and the radiological effects, if any, as a result of plant operation. The program will provide an environmental measurement history for evaluation by the Supply System and the Council. Such a program will use best reasonable and available methods and techniques and must be maintained at necessary levels through the life of the project.

The Environmental Monitoring Program will be flexible and may be modified upon approval of the Council as detailed information is acquired from the program. Any modifications will be based upon: (a) project effects, if any, on the terrestrial and aquatic ecology including the wildlife, fish and other aquatic life in the project influence area, (b) informational inputs obtained during the pre-operational monitoring, (c) siting of other nuclear or other facilities in

areas surrounding the site, (d) technological developments in the field of environmental monitoring, (e) changes in type and abundance of natural vegetation, (f) changes in conditions which relate to the pathways which lead to human radiation exposure, and (g) changes in applicable acceptable levels of project discharges to the environment or effects on the environment.

The monitoring program shall be designed to assure appropriate reaction will occur when an unexpected variance occurs in the data results.

Changes, supplements or revisions to the Environmental Monitoring Program will be submitted to the Council for its review and approval.

II. ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM

A. Program Elements

1. Air sampling locations will be established onsite and offsite. Special attention will be given to location of air samplers within five miles of the plant and in areas where populations are concentrated.

2. In the terrestrial monitoring part of this program (vegetation, soil, farm products), the area within a ten-mile radius of the site will be of primary concern. Special emphasis will be placed on dairy farming.

   Particular emphasis will be placed on the collection of those primary food chain components which lead to man. Soil samples, vegetation, dairy products (milk) and other items will be sampled.

3. In the aquatic program, sampling will include samples from the Chehalis River, its tributaries, ground water and water supply from wells.

   The aquatic food chain constituents included in this program will be taken from the Chehalis River and Grays Harbor and will include the collection of bottom sediments and organisms, plankton, periphyton, and aquatic vegetation, and fish.

   Sampling frequencies will depend upon weather, growing season, animal and fish activity and other considerations stated in orders, permits or agreements issued by the Council or deemed appropriate in each case.

B. Surveillance Levels

The radiological monitoring program outlined in Table 1 attached herewith and made a part hereof, represents the level of surveillance during the pre-operational and operations phases.

Analytical Procedures shall be compatible with but not limited to the following documents, or later documents representing state of the art improvements:

1. "Handbook of Radiochemical Analytical Methods," U.S. Environmental Protection Agency, EPA-680/4-75-001, February, 1975.

2. "Health and Safety Laboratory Procedures Manual," U.S. Energy Research & Development Administration, HASL-300, 1972.

3. "Standard Methods for the Examination of Water," American Public Health Association, 13th Edition.

For comparison purposes, the Supply System will furnish the Council or its designated representatives, upon request, half samples of specimens for their evaluation and analysis.

Sample stations are described in the following discussion of sample types.

1. Atmosphere

a. Gamma Detectors:

The external gamma spectrum will be continuously monitored at four positions.

b. TLD Dosimeters:

Levels of external radiation will be established by exposing thermo-luminescent dosimeters (TLD) for various periods of time at fifteen locations. Nine dosimeters will be maintained at each station: three dosimeters are changed and read monthly, three dosimeters are changed and read quarterly, while the other dosimeters are changed and read annually.

2. Airborne Particulates and Iodine:

Airborne radioactive particulates and gaseous iodine will be collected on a weekly basis at four of the TLD stations.

3. Plant Discharge Water

Discharge Water will be monitored continuously for gamma activity.. A weekly sample will be taken for more detailed analysis and for calibration of the continuous gamma monitor.

4. River Water:

Sampling of the Chehalis River will be performed on a monthly basis from four locations: two miles upstream of outfall, at outfall, 1000 meters downstream from outfall, and at the mouth in Grays Harbor. Sampling on a monthly basis will also be performed at one location on the Satsop River one mile above its confluence with the Chehalis.

5. Groundwater

Sampling of groundwater will be performed monthly from wells near the station. The wells include the Elma water supply.

6. Vegetation

a. Garden Vegetables:

Samples of the edible portions of garden vegetables will be collected three times annually during the growing season.

b. Pasture Grass:

Edible portions of food and feed crops will be sampled at three locations within a ten-mile radius of the station. Samples will be collected at the same locations as the milk samples and will be collected three times during the growing season.

7. Soil

Soil samples will be collected semi-annually at three locations.

8. Sediment Samples

Samples of the Chehalis River bottom sediment will be collected quarterly at three locations in common with water and aquatic organism sampling.

The intensity of effort on the monitoring program will vary with increasing activity immediately before and after the initial operation of each project. Continuous evaluation of monitoring data will be accomplished to produce a more efficient environmental surveillance program. Portions of the program may be adjusted depending upon an evaluation of program results.

A. Pre-Operational Aquatic Monitoring Program

The pre-operational monitoring program for WNP-3 and WNP-5 will include an effort in each of the trophic levels of importance.

1. Benthic Macroinvertebrates Program

Benthic macroinvertebrates and drift-emergent insect fauna will be studied at three Chehalis River stations during the period from prior to site preparation for the first unit. These stations include:

Discharge (to 1000 ft. below)
Greenbanks
Intake Area

The sampling schedule is as follows:

Macrobenthos/Drift/Emergent Insect

	J	F	M	A	M	J	J	A	S	O	N	D
Macrobenthos	X		X	X	X	X	X	X	X			
Drift/Emergent Insect	X		X	X	X	X	X	X	X			

Following the conclusion of the initial year of the pre-operational studies each task and sampling effort will be reviewed.

2. Drift - Emergent Insect Fauna

The drift-emergent insect study will complement the benthic program. Sampling stations and the monthly sampling frequency of benthos/drift will coincide as to provide a more complete picture of the river fauna.

3. Periphyton Program

Beginning before site preparation, three stations in the Chehalis River will be utilized for periphyton studies. These stations coincide with those established for the fisheries program and the benthid macroinvertebrade/drift-emergent insect program.

4. Fisheries Program

The pre-operational monitoring period beginning two years prior to start-up of the first unit will include as fisheries study sites: the intake area, the discharge area (to 1000 ft. downstream), the "Greenbanks" region, the Fuller Bridge area, the Chehalis River holding area above the discharge, a station on the Wynoochee within one mile of its mouth, and a station on Workman Creek above its mouth.

Fisheries work performed will include estimates of species composition, food habits, length and weight relations, and an identification of Chehalis River habitat utilization by adult and juvenile fishes, including migratory routes and spawning areas. Sampling of the fishery will be performed monthly for the initial two year period.

Fishery work planned for the first two years of the pre-operational studies and for the last year before startup of the first unit will involve an intensive survey of fishery community characteristics. These will include: species composition, growth patterns, condition factors, population age structure, food habits, habitat utilization by species, species diversity, timing of sexual maturity, incidence of disease and migrational patterns of anadromous fish. Water depth, temperature, dissolved oxygen, turbidity, and BOD will be measured simultaneously with biological sampling.

B. Operational Aquatic Monitoring

The operational aquatic monitoring program will be a continuation of the pre-operational preliminary sampling program. The scope of the operational aquatic monitoring program will be determind as the results of the preliminary survey are developed. This program will be developed by the Supply System and approved by the Council prior to operation of either project.

V. WATER QUALITY MONITORING PROGRAM

This program will be established to monitor water quality parameters. Data obtained by this program will also supply necessary information to the study of the aquatic life in the river. Monitoring will begin two years prior to start-up of the first unit.

A. Construction of Blowdown Diffuser

Measurements of suspended sediment concentrations and turbidity will be performed at river cross-sections

100 feet above and 300 feet downstream from the outfall structure. The measurements will be conducted weekly in mid-afternoon during construction of river bank facilities. The sampling areas and frequency may be modified according to the sampling results. Sediment concentrations will be measured by a conventional suspended sediment sampler.

B. Surface Water

Four sampling stations have been selected on the Chehalis River and one on the Satsop. An additional five stations have been located on creeks in the vicinity of the project site.

1. Construction Period

Suspended solids, turbidity, oil and grease, fecal coliform and pH are to be measured weekly. Total dissolved solids, alkalinity, total hardness, dissolved oxygen, conductivity, sulfate, nitrate, nitrite, BOD, COD, total dissolved gas, ammonia-nitrogen, kjeldahl nitrogen, total coliform and total phosphate are to be measured monthly.

2. Pre-Operational Period

All of the above parameters will be measured monthly; in addition calcium hardness, chloride, flouride, calcium, magnesium, sodium, bicarbonate, carbonate and phenol will be measured monthly at the four Chehalis River sites and one Satsop River site.

3. Operational Period

The operational water quality monitoring program will be a continuation of the pre-operational sampling program. The scope of the operational program will be determined as the results of the pre-operational survey are developed. This program will be developed by the Supply System and approved by the Council prior to operation of either project.

4. Thermal Effluent Monitoring

Surface and bottom temperatures of the river 100 feet above and 100 feet below the blowdown diffuser and the blowdown itself will be monitored continuously.

VI. TERRESTRIAL ECOLOGY PROGRAM

The terrestrial ecology monitoring program for WNP-3 and WNP-5 is part of an integrated monitoring program for the construction, pre-operational and operational phases. Pre-construction monitoring will begin in 1976 and continue for a minimum of two years.

The purpose of the terrestrial ecology program will be to identify the impact of construction activities and plant operation upon the terrestrial ecosystem.

A. Aerial Photography

Aerial photographs in natural color and false color infrared of the site and adjacent area will be made to provide a basis fo mapping the extent of changes in existing plant communities. Future photography will depend on the utility of the photographs as determined by the Council.

B. Establishment of Experimental Watersheds

Four experimental watersheds, each comprising 40 to 60 acres, will be located within 1.5 miles of the plant facilities. Selection of watersheds and delineation of

boundaries will be based on an analysis of aerial photographs, vegetation maps, topographic maps, and existing soil survey information.

C. Vegetation Sampling

A quantitative description of the vegetation of the four experimental watersheds will serve three purposes: aid analysis of the eco-system processes selected for monitoring possible biological responses to construction and operation of the pwer plant; provide estimates of similarities and differences between the vegetation of the four experimental watersheds; and allow comparison of the watersheds with other Douglas fir forests of western Washington which have been the focus of watershed ecosystem studies.

1. Establishment of Sampling Quadrats

Ten quadrats, each 5 meters by 15 meters, will be established in each watershed. Additional quadrats will be added during the construction program until the variability of the recorded data is reduced to an acceptable level. Initial work will commence

in 1976, after selection of the experimental areas on sites corresponding to points randomly selected from a grid system developed for each watershed.

2. Recorded Data

Species, diameter at breast height (dbh), and estimated height will be recorded for each canopy (dbh greater than or equal to 10cm) and subcanopy trees (dbh greater than 5 cm but less than 10 cm). Cores may be obtained with an increment borer, from selected trees to determine stand age, should this information not be available. Species, density, and estimated cover will be recorded for shrubs (dbh greater than 1.0 cm but less than 50 cm) and herbs (dbh less than 1.0 cm). These data will be recorded in a form suitable for computer calculation of density, dominance, frequency, and importance values for each species.

Aspect and slope will be determined at each quadrat with a compass and clinometer. Insect damage, disease and other natural stresses on vegetation will be noted and recorded photographically.

D. Distribution and Chemical Composition of Lichens and Mosses

This aspect of the program will provide information needed to assess the importance of atmospheric inputs associated with cooling tower operation.

1. Lichen Distribution

A systematic photographic record of lichens and mosses at ground level and different heights above ground will be obtained at each quadrat established in the Vegetation Sampling Program. Lichen studies will be conducted, initially, at two experimental watersheds and expanded if preliminary data do not provide a data statistically adequate description of lichen distribution. Lichens will be identified in the field, when possible, and appropriate voucher specimens are collected. A less intensive lichen program will be conducted during the period of plant construction to obtain information on natural variability of lichen species abundance.

2. Chemical Composition

From analysis of field data, a species of lichen which is relativley abundant and widely distribu-

ted will be selected for chemical analyses. Lichen thalli will be ashed and analyzed with atomic absorption techniques or appropriate standard methods for S, Cl, Ca, Na, and the heavy metals Hg, Cu, Zn, and Cr. This phase of the program will be conducted once prior to construction, two years before scheduled startup of the first unit.

E. Chemical Composition of Follar Leachate

Analysis of precipitation which has filtered through the canopy foliage leachate will be utilized, along with data obtained from the Meteorology - Air Quality Programs, assessing possible biological responses to atmospheric inputs resulting from cooling tower operation.

1. Collection

Leachate will be collected at least monthly during the first year of the program, at five stations in each of two experimental watersheds. Additional stations will be established if data analyses reveals an unacceptable level of variation. A collector at each station will retain leachate and minimize entry of particulate matter and evaporation of leach between collection periods.

2. Analysis

Leachate will be analyzed, using standard technique methods for $SO_4^=$, Cl-, CA++, Na+. Sampling of foliar leachate will be conducted throughout the construction period, although the intensity of sampling may be altered after analysis and review of the initial data.

F. Soil Characteristics

1. Classification

Classification of the soils of the four experimental watersheds as to series and type will be ascertained from existing soil surveys. This information will be necessary to determine the similarity of the watersheds, and to interpret the measured chemical composition of soil and stream water.

2. Chemistry

Soil samples will be extracted with an auger from two definable horizons, decomposed litter (O_2) and mineral - litter interface (A_1). Additional samples may be obtained from only one of the two

horizons, based on observed variability of chemical analyses. Three soil samples will be collected at each of the vegetation quadrats described in Section B.

Replicate analyses will be conducted, with standard techniques, for available $SO_4^=$, CL-, CA++, Na+ and Hg, Cu, Zn, and Cr.

G. Watershed - Ecosystem Analysis

The program of watershed ecosystem analyses is designed to collect information which will describe the principal interrelationships between terrestrial and aquatic ecosystems. These are the interrelationships responsible for the transfer of terrestrial organic production from the forest to the aquatic system, upon which the latter is largely dependent. This program will attempt to scientifically assess several of the key processes which the terrestrial and aquatic ecosystem depend on.

Physical processes will be monitored by the meteorology, and water quality programs. These data will be interpreted as inputs to and outputs from the proposed experimental watersheds. In this scheme, the forest is viewed as the recipient of atmospheric inputs. The terrestrial ecosystem processes these inputs and then

exports, by way of the streams, a spectrum of nic and inorganic materials. The stability and diversity of these receiving bodies is, in large part, dependent upon the amount and rates of flux of these substances.

1. Leaf Litter

Litter fall will be collected on screen traps ($0.25\ m^2$) arrayed in three groups of five in two watersheds. Allocation of sampel stations will be based upon a review of aerial photographs, in an effort to insure homogeneity of forest type. Samples will be collected monthly, sorted into representative constituents, oven dried, and weighed.

2. Leaf Litter Decomposition

Leaf litter decomposition will be studied using the mesh bag techniques of Cromack (1973) during the summer and fall of 1976. These will be compared statistically with IBP studies conducted at Thompson Forest.

Soil arthropods will be collected at five stations in two watersheds using soil coring apparatus. Core samples will be split into O_1 and O_2 horizons and

their arthropod populations extracted using Berlese funnels. Soil arthropods will be oven dried (70°C) to constant weight. These data will be correlated with soil respiration (CO_2), moisture content, temperature and litter depth.

3. Organic-Inorganic Export

Organic-inorganic export from each of the watersheds will be monitored on primary forest streams monthly by the water quality program. Particulate carbon, dissolved carbon, Ca, Na, K, NO_3, PO_4, F, and SO_4 will be measured.

4. Ariolimax Columbianus

Because of the potential importance of A. columbianus in detrital processes, populations of these species will be estimated using exclusion traps in two watersheds during the summer of 1977-1979.

5. River-Stream Litter Decompositin

Litter input to primary and secondary forest streams will be monitored monthly using litter traps (10/ stream; wire mesh screens). A preliminary study of stream litter decomposition will begin during

the fall of 1976. Information obtained will include rates of decomposition, amount of litter input and the benthic fauna associations in the primary-secondary streams.

This program will be reviewed annually.

H. Faunal Program

Monitoring terrestrial fauna will focus upon surveys of deer, ruffed grouse and birds. The overall program will be limited to seasonal observations of each population. Efforts involved will be limited to qualitative estimates of changes in habitat utilization and seasonal occurrence.

Deer and ruffed grouse habitat utilization will be quantified and described within each watershed. Methods used to describe deer and ruffed grouse habitat utilization procedures will be the same as those employed during the licensing period studies.

Deer techniques include three pellet track transects (200 ft.) in each watershed and observation. Grouse techniques will include call counts. Frequency of sampling will be monthly during the spring, summer and

fall, 1976-1979. This program will be reviewed at the end of the 1979 sampling period.

Aviacommunities will be studied by spot census at the twenty stations selected during the licensing period. Comparative data (spot census) from the four watersheds surrounding the project will be collected. Bird species presence - absence data will be collected four times during each spring, summer, fall and winter season.

I. Operational Program

The operational terrestrial ecology monitoring program will be a continuation of the pre-operational sampling program. The scope of the operational program will be determined as the results of the pre-operational survey are developed. This program will be developed by the Supply System and approved by the Council prior to operation of either project.

TABLE 1

SAMPLING SUMMARY

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM

Sample Type	Stations	Sampling Frequency	Analysis
1. Background			
a. External Gamma Spectrum	4	Continuous	(Background Gamma
b. TLD Dosimeters	15	Monthly, Quarterly, Annually	(Readout & Record (at Noted Frequency
2. Air			
a. Particulates	4	Weekly	(Gross Beta (Gamma Scan (Radio Iodine
b. Iodine	4	Weekly	
3. Plant Discharge Water	1	Continuously	(Gamma Activity (Gross Alpha (Gross Beta (Gamma Scan & Tritium
	1	Weekly	
4. River Water	5	Monthly	(Gross Alpha (Gross Beta (Gamma Scan & Tritium (Quarterly ^{89}Sr & ^{90}Sr
5. Groundwater	2	Monthly	(Gross Beta (Gamma Scan & Tritium

Sample Type	Stations	Sampling Frequency	Analysis
6. Vegetation			
a. Garden Vegetables	2	At Harvest	(Gamma Scan
b. Pasture Grass	3	3 Times during growing season	(Gamma Scan
7. Soil	3	Semi-annually	(Gross Beta (Gamma Scan (^{90}Sr & ^{89}Sr
8. Sediment	3	Quarterly	(Gross Beta (Gamma Scan (^{90}Sr & ^{89}Sr
9. Milk	5	Monthly	(^{131}I (^{90}Sr & ^{89}Sr (Gamma Scan
10. Aquatic Biota			
a. Fish	4	Quarterly	(^{90}Sr & ^{89}Sr (Gamma Scan
b. Benthos	4	Quarterly	(^{90}Sr & ^{89}Sr (Gamma Scan
c. Vegetation & Plankton	2	Quarterly	(^{90}Sr & ^{89}Sr (Gamma Scan
11. Wildlife			
a. Raccoon/Substitute	1	Annually	(Gamma Scan
b. Waterfowl	1	Annually	(Gamma Scan

ATTACHMENT V

United States Department of the Interior

BONNEVILLE POWER ADMINISTRATION
P.O. BOX 3621, PORTLAND, OREGON 97208

OFFICE OF THE ADMINISTRATOR

In reply refer to: A

October 18, 1976

Honorable Daniel J. Evans
Governor of Washington
Olympia, Washington 98504

RECEIVED
OCT 20 1976
GOVERNOR'S OFFICE

Dear Governor Evans:

In response to requests from your staff regarding BPA's choice of line locations and the decision to build the Satsop Integrating Transmission, let me confirm statements made in my letter of September 16, 1976.

BPA selected the route identified as "alternate Route 1A" as the route location for its Satsop Integrating Transmission after an extensive environmental analysis which included input from many members of your staff, all of which are reflected in our Final Environmental Impact Statement dated June 8, 1976. The engineering factors have been considered and all decisions for the location of the line have been made by BPA with "alternate Route 1A" as the choice.

We are preparing to build with proposed completions to meet dates for commercial operation of WPPSS Nos. 3 and 5. BPA has already done the reconnaissance and has obtained permissions to survey from many of the landowners.

We assume this statement of our present position regarding the Satsop Integrating Transmission meets all your needs.

Sincerely yours,

Ronald Paul Rohrl
Administrator

RESOLUTION NO. 248

WHEREAS, The Site Certification Agreement for the Washington Public Power Supply System Nuclear Projects Nos. 3 and 5 includes the following conditions covering the protection, replacement and/or compensation of wildlife, fish or other aquatic life, ecosystem, recreational opportunities or vegetation:

> Condition IV.D.1 - "Supply System agrees to provide replacement and/or compensation, as established by the Council, for any wildlife, fish, or other aquatic life or ecosystem damage or loss caused by construction or operation of the project;"
>
> Condition IV.D.2 - "Supply System shall provide such additional measures for protection of wildlife, fish, and other aquatic life and the ecology of area deemed necessary by the Council to minimize adverse impact from construction or operation of the project;"
>
> Condition VI.A.2 - "Supply System agrees to provide replacement of recreational opportunities found by the Council to be adversely affected by project activity. Affected areas may include, but are not limited to, land owned or controlled by Supply System immediately outside the project security area and detached parcels associated with project facilities or routes. Supply System may impose reasonable health, safety, and security regulations on use of recreational areas;"
>
> Condition III.C.3 - "In the event of damage to or removal of vegetation resulting from construction by Supply System, Supply System agrees to return the area affected to original topsoil condition and to restore indigenous plant species;
>
> Condition III.I - "Supply System agrees upon completion of construction to dispose of all temporary structures not required for future use. It also agrees to dispose of used timber, brush, refuse or flammable material resulting from the clearing of lands or from the construction of the project in a manner agreed to by the Council; and

WHEREAS, During the 1980-1983 period a Revegetation Task Force consisting of state agency resource personnel was created to assist the Supply System to develop a re-vegetation and landscaping recovery plan to determine the most promising sites for habitat enhancement and reclamation; and

WHEREAS, The Supply System by letter G03-83-554 dated July 15, 1983 informed the Council of the project slowdown and indicated under the delay contingency plan that game mitigation/revegetation plan development activities were being deferred until restart; and

WHEREAS, The Washington Department of Game, now identified as Department of Wildlife, developed a draft WNP-3/5 Management/Mitigation Plan, dated August 16, 1986, that outlined a two part plan for mitigating impacts during the construction delay and upon restart; and

WHEREAS, The Supply System by letter G03-87-263 dated August 27, 1987 transmitted the WNP-3 Land Management Plan to the Council which addressed the disposition and maintenance of land parcels associated with the WNP-3 facility and identified the need for compliance with EFSEC commitments for forested lands, grasslands, erosion control, and game mitigation/recreation; and

WHEREAS, The Supply System by letter G03-89-095/G05-89-016 dated June 15, 1989 requested a meeting with the Certificate Compliance Committee to review the proposed timber management program and requested concurrence that submitting a Forest Practices Application was the appropriate mechanism for regulatory review; and

WHEREAS, A special Certificate Compliance Committee meeting was held at the Satsop Site on July 13, 1989 with representatives of the Council, Supply System, Washington Department of Wildlife, Department of Natural Resources, and the Supply System's consultant Washington Timberland Management, Inc., to become familiar with the timber management proposal and wildlife/harvesting considerations; and to tour the proposed harvest units; and

WHEREAS, Staff from the Supply System and the Washington Department of Wildlife, with participation of staff from the Department of Natural Resources, Washington Timberland Management and EFSEC met on July 18, 1989 to work on an agreement for wildlife mitigation and timber management for the Satsop site;

WHEREAS, By letter G03-89-122 dated July 27, 1989 the Supply System transmitted to EFSEC a Forest Practices Application for the proposed selective harvest of timber from Timber Management Units 7, 10, 13 and 16; with a copy to the Department of Natural Resources as agreed to during the July 18, 1989 meeting; and

WHEREAS, By letter G03-89-139 dated August 18, 1989 the Supply System submitted the interim agreement reached by the Supply System and Washington Department of Wildlife on WNP-3/5 wildlife mitigation and timber management; and

WHEREAS, The Certificate Compliance Committee met with both parties to review the interim agreement and the Forest Practices Application and found that the proposed actions are adequate and reasonable to meet the state's wildlife and forestry interests at this time;

NOW, THEREFORE, BE IT RESOLVED, That the Energy Facility Site Evaluation Council hereby adopts the attached Interim Agreement on Wildlife Mitigation and Timber Management dated August 18, 1989 between the Washington Department of Wildlife and the Supply System. It is understood that the parties will adhere to the provisions therein and following conditions:

1. The Supply System and its contractors will harvest timber on units 7, 10, 13, and 16 in accordance with the conditions listed below in the Council's timber harvest approval for the those four management units;

2. Timber harvesting beyond units 7, 10, 13, and 16 will only be considered following Council approval of a Wildlife Mitigation Plan for the WNP-3/5 Site;

3. A final draft of the Wildlife Mitigation Plan will be completed and forwarded to the Council on or before June 30, 1990; the Council will consider the plan in a timely manner;

4. The Supply System will begin Wildlife Mitigation Plans in conjunction with the Timber Management Program, scheduled for initiation in Fiscal Year 1990 (July 1, 1989 to June 30, 1990);

5. The Supply System will provide the funding necessary to meet the mitigation commitments specified in the agreement;

6. The Supply System will schedule the survey of the Skarperud parcel for completion on or about September 30, 1989;

7. No activity detrimental to wildlife will be pursued in the set aside areas identified in Article 6 of the agreement; and

8. The Council has addressed Wildlife's July 18, 1989 comments in the timber harvest approval issued for units 7, 10, 13, and 16.

BE IT FURTHER RESOLVED, That the Council hereby approves the timber harvest proposed by the Supply System in its Forest Practices Application dated July 27, 1989 subject to the following conditions:

1. The Supply System is authorized to selectively harvest timber from Timber Management Units 7, 10, 13, and 16 at the WNP-3/5 site;

2. Harvesting practices, consistent with the Forest Practices rules and regulations and as determined by the Department of Natural Resources and other resource agencies and those specified in the Forest Practices Application, will be met by the Supply System and its contractors. Notwithstanding the above, the Council applies the following conditions to the timber harvest:

    a. The skid trails used for the timber harvest are to be kept off slopes greater than 30% (WAC 222-30-070(8));

    b. The skid trails are to be water barred every 10 feet of elevation change to prevent soil erosion (WAC 222-30-070(7));

3. The following timber management objectives will be met by the Supply System and its contractors in the four units scheduled for harvesting in the late summer or fall of 1989:

   a. For Unit 7: Remove 30 percent of the representative stand by species and size. Department of Wildlife will work with Washington Timber Management (Supply System contractor) to mark trees for harvest. Leave or develop at least two snags per acre along edges and/or in buffer areas. Rehabilitate alder to douglas fir as suggested in the timber management plan. Not to be reentered for eight years;

   b. For Unit 10: Remove 30 percent of the representative stand by species and size. Wildlife staff will work with Washington Timber Management to mark trees for harvest. Leave some small slash piles and develop some bunching tops;

   c. For Unit 13: Rehabilitate alder and conduct selective cutting as proposed in timber management plan. In alder removal area, look for opportunities to leave dying or dead trees over 15 inches DBH. Develop at least two snags per acre in each unit. Start pilot rehabilitation program for meteorological field;

   d. For Unit 16: As proposed in timber management plan except leave or create two snags per acre with created snags to be at least 22 inches DBH. Not to be reentered for eight to ten years;

   e. Examine possibility of using static skylines to do selective logging in areas where slope, terrain and/or soil need protection;

   f. For snag recruitment, blowing of tops is preferable to girdling. It is desirable to have snags in riparian areas to avoid future disruption; and

4. The Supply System will report to the Council on all harvesting activities. Monitoring trips to the site may be necessary; such visits will be coordinated with the site environmental engineer.

Dated this 28th day of August 1989.

WASHINGTON STATE ENERGY FACILITY
SITE EVALUATION COUNCIL

By _____
Curtis Eschels
Chairman

Attest:

By _____
William L. Fitch
Executive Secretary

ATTACHMENT: Interim Agreement on Wildlife Mitigation and Timber Management Between the State of Washington, Department of Wildlife and the Washington Public Power Supply System

2/23/93 R. 22

As thought, no language here indicating that agreements in the site application or certification are superseded DM

RESOLUTION NO. 254

WHEREAS, The Site Certification Agreement for the Washington Public Power Supply System Nuclear Projects Nos. 3 and 5 contains provisions for the protection, replacement and/or compensation of wildlife, fish or other aquatic life, ecosystem, recreational opportunities or vegetation; and

WHEREAS, By Resolution No. 248, dated August 28, 1989, the Council approved an Interim Agreement between the Washington Department of Wildlife and Supply System that specified timber management and wildlife mitigation commitments for the site and required the Supply System to submit a Wildlife Mitigation Plan for the WNP-3/5 (Satsop) site on or before June 30, 1990; and

WHEREAS, By letter GO3-90-079 dated May 31, 1990 the Supply System submitted the completed Satsop Power Plant Site Wildlife Mitigation Plan, Revision 0, in accordance with Resolution No. 248; and

WHEREAS, The Department of Wildlife notified the Council by letter dated July 19, 1990 that its staff had participated in drafting/reviewing of the plan and indicated their approval of the plan; and

WHEREAS, The Certificate Compliance Committee has reviewed the Satsop Wildlife Mitigation Plan and considered the comments received from the Department of Wildlife and finds that the Satsop Wildlife Mitigation Plan provides an adequate program for mitigating impacts on wildlife during the construction delay and for determining future wildlife enhancement and mitigation requirements;

NOW, THEREFORE, BE IT RESOLVED, That the Energy Facility Site Evaluation Council hereby approves the attached Satsop Power Plant Site Wildlife Mitigation Plan, Revision O, dated May 29, 1990.

Dated this 13th day of August 1990.

WASHINGTON STATE ENERGY FACILITY
SITE EVALUATION COUNCIL

By _____
C. Robert Wallis
Acting Chairman

Approved As To Form:

By _____
John Keith
Assistant Attorney General

ATTACHMENT: Satsop Power Plant Site Wildlife Mitigation Plan, Revision O