BEFORE THE WASHINGTON STATE THERMAL POWER

PLANT SITE EVALUATION COUNCIL

In the Matter of Applications 71-1 and 74-2 of the WASHINGTON PUBLIC POWER SUPPLY SYSTEM for NPDES permits, a §401a certificate of compliance, and modification of certain portions of the Hanford No. 2 Site Certification Agreement.	FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

This matter came on regularly for hearing at 10:00 a.m., March 6 and 7, 1975, at the City Hall, Richland, Washington, before the following members of the Thermal Power Plant Site Evaluation Council:

THOMAS STACER, Chairman	Utilities and Transportation Commission
ROBERT MOONEY	Department of Social and Health Services
FREDERICK HAHN	Department of Ecology
LAWRENCE BRADLEY	Department of Commerce and Economic Development
FREDERICK CLAGETT	Planning & Community Affairs Agency
WESLEY BROWN	Benton County
JOHN CLARK	State Parks & Recreation Commission
DAVID GUIER	Department of Emergency Services

RALPH LARSON	Department of Game
BRUCE REEVES	Department of Natural Resources
CHARLES WOELKE	Department of Fisheries

and Legal Examiner John Von Reis.

The parties were represented as follows:

APPLICANT: WASHINGTON PUBLIC POWER SUPPLY SYSTEM
By Joel Haggard
Attorney at Law
900 Hoge Building
Seattle, Washington 98104

and

By Richard Quigley
Attorney at Law
3000 George Washington Way
Richland, Washington 99352

COUNCIL MEMBER AGENCIES:

DEPARTMENT OF ECOLOGY
By George Hansen
External Affairs Director
Olympia, Washington 98504

Mr. Darrel Peeples, Attorney for the Council, also participated in the hearing.

Having examined the record and file in the matter and having been advised thereof, the Council makes the following findings of fact:

FINDINGS OF FACT

1. On May 17, 1972, pursuant to application 71-1, the

State of Washington and the Washington Public Power Supply System (hereinafter referred to as "WPPSS" or "the Supply System"), a municipal corporation of the State of Washington, entered into a site certification agreement setting forth conditions attendant upon the construction of WPPSS's (Hanford) Project No. 2, to be built on the then United States Atomic Energy reservation in Benton County, Washington. In part, this agreement specified facilities and limits for the discharge of pollutants from the Hanford Number 2 Project into the waters of the Columbia River. The project is to become operational during 1979.

2. The Supply System has requested the Council to recommend to the governor certification of sites on the Hanford Nuclear Reservation in Benton County, Washington, for construction of WPPSS's Nuclear Projects Numbers 1 and 4. These projects, to be located near the aforementioned site for Hanford Nuclear Project #2, would, if operational, result in the discharge of pollutants into the Columbia River by means of a single outfall.

3. On January 20, 1975, WPPSS applied to the Council for an NPDES permit authorizing it to discharge pollutants into the Columbia River at outfall 002, Latitude 46° 28' 17", longitude 119° 15' 45". WPPSS also requested certification that its discharges would be in compliance with Sections 301, 302, 306 and 307 of the Federal Water Pollution Control Act, which matter the Council has disposed of by previous agreement. On January 31, 1975, WPPSS requested that the Council recommend

modification of the May 17, 1972, Hanford No. 2 site certification agreement to eliminate provisions therein duplicative of or inconsistent with the terms of any NPDES permit issued for the project. The Federally drawn requirements which must be met before an NPDES discharge authorization permit may issue became effective after the May 17, 1972, agreement was drawn.

4. On May 29, 1974, WPPSS applied to the Council for an NPDES permit for its Nuclear Projects Nos. 1 & 4, which permit would authorize pollutant discharges into the Columbia River at outfall 001, latitude 46° 28' 23", longitude 119° 15' 50". Applicant also sought from the Council certification that its discharges would be in compliance with Sections 301, 302, 306 and 307 of the Federal Water Pollution Control Act.

5. On February 4, 1975, the Council published draft permits for Nuclear Projects Numbers 2 and 1 & 4, and made tentative determinations that it would approve NPDES permits as stated in the drafts.

6. On February 4, 1975, the Council consolidated the two matters mentioned in findings of fact three and four above, and set them for public hearing on March 6, 1975.

7. The parties to the March 6, 1975, public hearing stipulated that certain changes should be made in the Council's tentative draft NPDES permit for Project No. 2, issued February 4, 1975. The parties submitted the stipulations to the Council for

its consideration. The Council, in light of these stipulations, finds the following changes appropriate on the record of the proceedings:

a.) To clarify the functions of specified facilities, and to remove technical inaccuracies in the draft language, the following wording should be adopted as general condition 5 of any NPDES permit issued for Hanford Nuclear Project No. 2:

> "Excess process water shall not be discharged to the river unless sampling and analysis has demonstrated that the water complies with the applicable regulations on liquid radioactive discharges. Excess process water not meeting these conditions shall be processed in the liquid radwaste treatment system prior to discharge to the river. The liquid radwaste treatment system shall provide facilities with 24-hour retention capabilities; liquids may be discharged only after sampling and analysis demonstrate that all applicable regulations are complied with. No other liquid radwaste shall be discharged."

b.) To specify circumstances upon which applicant would be permitted to discharge effluent from its liquid radwaste system, the following wording is appropriate as note 1 of portion 5B (pertaining to low volume waste sources) of any NPDES permit issuing for the aforementioned Project No. 2:

"Flow (GPD) (1)"

"Note (1): Permittee is allowed on an intermittent basis to discharge subject to the provisions of G.5 herein to a maximum of 285,000 GPD additional flow originating from the liquid radwaste treatment system."

c.) To assure the accuracy and completeness of discharge monitoring reports, the time stated in general condition 15 by which applicant must submit these reports should in all instances be changed to 28 days.

d.) Permitting applicant to discharge such amounts of the following pollutants as may be necessary in its operations and in keeping with good standards of stewardship consistent with applicable Federal and state requirements standards:

a. Acids and caustics when used for pH control;

b. Material occurring in the air which when entrained in the cooling tower gets washed out of the air and added to the coolant:

c. Biological materials from the recirculated water system;

d. Materials naturally occurring in the water supply which are concentrated as a result of the cooling tower operation;

e. Oil and grease originating in the recirculated cooling water blowdown, and

f. Materials resulting from plant chemistry effects upon plant materials.

8. The parties to the March 6, 1975, public hearing stipulated that certain changes should be made in the Council's tentative draft NPDES permit for Projects Nos. 1 & 4 issued February 4, 1975. The parties submitted the stipulations to the Council for its consideration. The Council, in light of these stipulations, finds the following changes appropriate on the record of the proceeding:

a.) To clarify the functions of specified facilities and to remove technical inaccuracies in the draft language, the following wording should be adopted as general condition 5 of any NPDES permit issued for WPPSS Nuclear Projects Nos. 1 & 4.

"Excess process water shall not be discharged to the river unless sampling and analysis has demonstrated that the water complies with the applicable regulations on liquid radioactive discharges. Excess process

water not meeting these conditions shall be processed in the liquid radwaste treatment system prior to discharge to the river. The liquid radwaste treatment system shall provide facilities with 24-hour retention capabilities; liquids may be discharged only after sampling and analysis demonstrate that all applicable regulations are complied with. No other liquid radwaste shall be discharged."

b.) To specify circumstances upon which applicant would be permitted to discharge effluent from its liquid radwaste system, the following wording is appropriate as note 1 of portion 5B (pertaining to low volume waste sources) of any NPDES permit issuing for the aforementioned WPPSS Projects Nos. 1 & 4.

"flow (GPD) (3) "

"Note (3): Permittee is allowed on an intermittent basis to discharge subject to the provisions of G.5 herein to a maximum of 108,000 GPD additional flow originating from the liquid radwaste treatment system."

c.) To assure the accuracy and completeness of discharge monitoring reports, the time stated in general condition 15 by which applicant must submit these reports should in all instances be changed to 28 days.

d.) Permitting applicant to discharge such amounts of the following pollutants as may be necessary in its operations and in keeping with good standards of stewardship consistent with applicable Federal and state requirements standards:

a. Acids and caustics when used for pH control and for metal cleaning;

b. Material occurring in the air which when entrained in the cooling tower gets washed out of the air and added to the coolant;

c. Biological materials from the recirculated water system;

d. Materials naturally occurring in the water supply which are concentrated as a result of the cooling tower operation;

e. Oil and grease originating in the recirculated cooling water blowdown, and

f. Materials resulting from plant chemistry effects upon plant materials.

9. Mr. William Waddell, environmental engineer with the supply system, described generally the No. 2 Project's discharge system, the discharge outfall's configuration in the river from the initial point 225 feet off the river's west bank betweeen river miles 351 and 352, and the river's characteristics in the region of the proposed discharge point. The discharge point was chosen to provide a 5 foot water cover over the discharge point at 36,000 cfs minimum flow.

Mr. Waddel also described the discharge system, the outfall configuration in the river, and the river characteristics in the vicinity of the discharge for WPPSS Projects Nos. 1 & 4. The No. 1 & 4 discharge will be located approximately 600 feet upriver from the Number 2 discharge point. The No. 1 & 4 outfall will be located approximately 125 feet off the river's west bank at a site chosen pursuant to criteria similar to those applied to the No. 2 outfall site selection. River characteristics at the two sites are essentially constant.

10. Mr. Richard R. Stickney, WPPSS nuclear engineer, identified materials to be passed out as part of the No. 2 Project's discharge flows, including those items identified in finding of fact 7d above. WPPSS needs authority to discharge all materials listed in finding 7d above in order to operate Project No. 2.

The operation of Project No. 2 will necessitate discharge, on an intermittent basis, of up to 285,000 GPD additional flow from the liquid radwaste treatment system. Applicant states it will

make such discharges only in accordance with conditions noted in Finding of Fact 7a above.

Mr. James Hanlon, nuclear engineer with the Supply System, identified those materials to be discharged in the No. 1 & 4 flows, including those materials listed in Finding of Fact 8d above. To operate Projects Nos. 1 & 4, WPPSS needs authority to discharge all materials listed in that finding. The operation of Projects Nos. 1 & 4 will also necessitate intermittent discharges of up to 108,000 GPD additional flow from the liquid radwaste system, which flows applicant states it will allow only in accordance with conditions stated in Finding of Fact 8a above.

11. Mr. LaVerle Coleman, supervisor of health physics and chemistry at the Supply System, described the chlorination systems to be used to control biological growth in the No. 2 and 1 & 4 Projects system. Unchecked biological growths would restrict and alter heat transfers in the main condenser tubes, restrict process flows, induce corrosion, restrict cooling tower water flow, and cause other difficulties in plant operation. Chlorination is the most appropriate technique for controlling biological growth in a system of the type applicant proposes. A system of the type designed by applicant does not permit discharge of all residual chlorine in its cooling system within 2 hours.

12. Mr. George Fry, Environmental Engineer for United Engineers and Constructors, discussed the reasons applicant seeks a waiver of EPA chlorine limitations. The EPA chlorine

discharge standards, which permit massive discharges for 2 hours in any 24-hour period and no discharge for the remaining 22 hours, are appropriate for a "once-through" cooling system, but are not compatible with a recirculating water cooling system such as that applicant proposes for its Project No. 2. The incompatibility results from the large volume of water chlorinated in a recirculated cooling system. The volume cannot be discharged during the time set in the EPA standards.

13. Mr. Orville Trapp, a mechanical engineer who serves as the Supply System's manager of engineering, discussed operable chlorine discharge limits for Project No. 2 and for Projects Nos. 1 and 4. Mr. Trapp's testimony supports the finding here made that operation of each of the three proposed plants is incompatible with a chlorine limitation allowing discharge during only 2 hours of any 24.

Mr. Trapp also presented a significant variation WPPSS proposes in measuring chlorine discharge limits for the three plants. While the Council in its draft called for an absolute limit in terms of pounds per day, the Supply System suggests a limit, .1 part per million, based on chlorine concentration in water. Two factors, the recirculatory systems' multimillion gallon capacities and the enormous dissolution potential in the receiving waters of the Columbia, will combine to minimize the chlorine's impact on aquatic biota.

Applicant proposes to inject chlorine into its plant recirculating systems at rates significantly higher than .1 part per million, but also to withhold chlorine discharges to the river for a sufficient period after injection (usually 3 to 5 hours) to permit the chlorine to decay to the .1 part per million level suggested. The discharge from Project No. 2 and the combined discharge from Projects Nos. 1 and 4 will each occur in concentrations not to exceed .1 part per million for approximately 20 hours out of each 24 hour period. A .1 part per million concentration implies a 28-1/2 pound chlorine concentration in the recirculating system.

14. Mr. William Waddel, WPPSS engineer, described the projected dissipation in the Columbia River of the No. 2 Project's discharged heat and chemicals. Chlorine in the mixing zone downstream from the discharge diffuser would be diluted to a concentration of .02 ppm within approximately seven seconds and 22 feet, assuming low flow river conditions of 36,000 cfs and a .1 ppm chlorine concentration at the discharge point, and no chlorine demand from the river. Under the same assumptions, the chlorine concentration at 120 seconds and 300 feet downstream from the discharge point would be approximately .001 part per million.

Assuming a 36,000 cfs minimum river flow, maximum blowdown discharge and a 25°F maximum temperature differential between the Project No. 2 plume and river temperature at the discharge point, the temperature differential in the mixing zone

20 seconds and 50 feet downstream from discharge would be approximately 3° F. At 120 seconds and 300 feet, the differential would be less than .5° F.

Miss Sharon Engstrom, WPPSS environmental engineer, described the anticipated dissipation of the No. 1 & 4 Projects' discharged heat and chemicals in the Columbia River. In the downstream mixing zone, chlorine would be diluted to a concentration of .02 parts per million within approximately 7 seconds and 22 feet assuming the above stated low flow and initial chlorine concentration conditions. At the mixing zone's edge, 120 seconds and 300 feet downstream, the chlorine concentration would be undetectable.

Assuming the same low flow conditions, together with maximum blowdown discharge and a 27° F. temperature differential at the initial discharge point, the differential 30 seconds and 75 feet downstream would be approximately 2° F., while at 120 seconds and 300 feet, the differential would be less than 1° F.

The effect of the No. 1 & 4 thermal plume on river temperature at the point of initial discharge for No. 2 would be less than 0.1° F.

The mixing zones herein discussed conforms with those defined in the Council's February 4, 1975, draft permits. Other materials discharged would be diluted in the mixing zones in a manner similar to that described for chlorine.

15. Dr. Roy E. Nakatani, Professor of Fisheries at the University of Washington and a consultant to the Supply System, testifies as to the impact of discharged materials from the three projects on aquatic biota in the Columbia River. No acute biological shock upon fish on a population basis can reasonably be expected as a result of heat or materials discharged into the mixing zones, though the mixing zones would become less effective rearing areas, and small numbers of individual kills, especially of benthic organisms, might result. Minimal damage to the river's ecosystem outside the mixing zones will result from the proposed project. Strictures contained in the Council's February 4, 1975, draft permit, as modified by proposals noted and described in the above findings, are sufficient to insure the maintenance on a population basis of Columbia River biota in the areas of influence of Project No. 2 and Projects Nos. 1 and 4.

16. Applicant has demonstrated that its proposed No. 2 and 1 & 4 steam electric power generating units cannot operate at a level of chlorination consonant with a discharge during only two hours of any day. Residual chlorine discharge from Project No. 2 and from Projects Nos. 1 & 4 satisfy the Council's limits and concerns only if discharges are made in accordance with the following limitations, which limitations are found appropriate for the projects' discharges:

> Upon initiating chlorination, permittee shall terminate all discharges from the recirculating water system to the receiving water until the

total residual chlorine concentration has been at or below 0.1 mg/l for 15 minutes. Chlorine measurement for compliance purposes is to be made at the unit being chlorinated. Sampling is to be performed on a grab basis for both projects.

17. NPDES permits issued by the Council in the form of the Council's aforementioned February 4, 1975, draft permits as for Project No. 2 and Projects Nos. 1 & 4 modified only by those changes proposed by applicant which have been hereinabove found appropriate for the respective plants, issued for a period of not to exceed five years from the date of issuance, establish conditions on discharges adequate for compliances with the requirements of 33 U.S.C. §1342.

18. The Council's February 4, 1975, draft permits, as modified by applicant's proposed changes hereinabove found appropriate, said changes being within the Council's power to make, insure that operation of the Project No. 2 and Projects Nos. 1 & 4 will be in compliance with requirements of Sections 301, 302, 306 and 307 of the Federal Water Pollution Control Act.

19. The following changes should be made in the May 17, 1972, certification agreement between the State of Washington and the Washington Public Power Supply system regarding the construction of Hanford Project No. 2:

a. Add to Section III. H. of the Agreement: "The outfall shall include features as required to achieve dilution within the limits prescribed in General Condition 4 of the attached NPDES permit";

b. Replace Section IV. B. in its entirety by the following: "Discharge to the Columbia River shall be done in accordance with the terms and conditions of a valid NPDES permit, which permit is attached hereto. See attachment."

From the foregoing findings of fact, the Council makes the following conclusions of law:

CONCLUSIONS OF LAW

1. The Washington State Thermal Power Plant Site Evaluation Council has jurisdiction over the persons and the subject matter of this proceeding.

2. The Council may properly issue applicant an NPDES permit in the form of the Council's February 4, 1975, draft permit for the project as modified by the above findings of fact in the manner shown in Appendix A attached hereto for applicant's Hanford No. 2 Project. Such permit will issue for a period not to exceed five years from date of issuance.

3. The Council may properly issue applicant an NPDES permit in the form of the Council's February 4, 1975, draft permit for the project as modified by the above findings of fact in the manner shown in Appendix B attached hereto for Applicant's WPPSS Nos. 1 & 4 Projects. Such permit will issue for a period not to exceed five years from date of issuance.

4. Discharges made pursuant to permits described in Conclusions of Law 2 and 3 above will be in compliance with applicable Federal and state statutes and regulations.

5. The Council may properly issue a certificate stating that any discharges made from applicant's WPPSS Nos. 1 & 4 projects will comply with applicable provisions of 33 U.S.C. 1311, 1312, 1316, and 1317.

6. The Council may properly recommend to the Governor that certain alterations and amendments, as noted in Appendix C attached hereto, be made in the May 17, 1972, Hanford Project No. 2 Site Certification Agreement entered into between the State of Washington and the Washington Public Power Supply System.

From the foregoing findings of fact and conclusions of law, the Council makes the following order:

O R D E R

IT IS, THEREFORE, ORDERED That the application of the Washington Public Power Supply System for an NPDES permit authorizing the discharge of pollutants from its Hanford No. 2 Project be, and the same is hereby, granted on conditions as noted in the permit set forth in Appendix A attached hereto and by this reference made a part hereof.

IT IS FURTHER ORDERED That the application of the Washington Public Power Supply System for an NPDES permit authorizing the discharge of pollutants from its WPPSS Nos. 1 and 4 Projects be, and the same is hereby, granted on conditions as noted in the permit set forth in Appendix B attached hereto and by this reference made a part hereof.

IT IS FURTHER ORDERED That a certificate issue pursuant to 33 USC §1341 stating and affirming that conditions in the NPDES permit now issued for WPPSS Projects Nos. 1 and 4 insure that any discharges made from those two projects will be in compliance with 33 USC §1311, 1312, 1316 and 1317.

IT IS FURTHER ORDERED That a recommendation be forwarded to the Governor that certain alterations and amendments, as set forth in Appendix C attached hereto and by this reference included as a part hereof, be made to the May 17, 1972, Site Certification

Agreement for the Hanford No. 2 Nuclear Project entered into between the State of Washington and the Washington Public Power Supply System.

ENTERED THIS 28TH DAY OF APRIL 1975

WASHINGTON STATE THERMAL POWER
PLANT SITE EVALUATION COUNCIL

BY Thomas C. Stacer

Thomas C. Stacer
Acting Chairman

APPROVED FOR ENTRY:

BY

Darrel Peeples
Assistant Attorney General

APPENDIX A

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 Amendment of 1972,
Public Law 92-500

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

Plant Location:

Section 5, T.11N, R28E W.M.
North of Richland
Benton County, Washington

Receiving Water:

Columbia River

Discharge Location:

Outfall 001
Latitude: 46°28'17"
Longitude: 119°15'45"

Industry Type: Nuclear Steam Electric Generating Plant (Hanford No. 2)

Water Segment No.: 26-03-00

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

Approved: April 28, 1975

Thomas C. Pierce

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:

A. LOW VOLUME WASTE SOURCES PORTION OF DISCHARGE SERIAL NUMBER 001

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Total Suspended Solids (lb/day)	34	5	3 times per week	Grab
pH	Between 6.5 and 8.5 at all times		3 times per week	Grab
Oil and Grease (lb/day)	7	2.5	Weekly	Grab
Flow (GPD)(1)	40,000	20,000	Each Discharge	Log tank contents prior to discharge.

Compliance with these limitations shall be determined by monitoring all low volume waste sources prior to their confluence with the recirculated cooling water.

Note (1) : Permittee is allowed on an intermittent basis to discharge subject to the provisions of G.5 herein to a maximum of 285,000 GPD additional flow originating from the liquid radwaste treatment system.

B. RECIRCULATED COOLING WATER BLOWDOWN PORTION OF OUTFALL DISCHARGE
SERIAL NUMBER 001

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Temperature	Note (3)		Continuous	Instantaneous
Total Residual Chlorine (mg/1)	0.1 mg/1(1)		Continuous(4)	Grab
pH	Between 6.5 and 8.5 at all times		Continuous(2)	Instantaneous
Flow (GPD)	9.4×10^6	9.4×10^6	Continuous	Instantaneous

Note (1) Upon initiating chlorination, permittee shall terminate all discharges from the recirculating water system to the receiving water until the total residual chlorine concentration has been at or below 0.1 mg/1 for 15 minutes. For compliance chlorine will be measured at the unit being chlorinated.

Note (2) Permittee shall include an alarm system for the pH control to provide an indication of any variance from established limits.

Note (3) The temperature of the recirculated cooling water blowdown shall not exceed, at any time, the lowest temperature of the recirculated cooling water prior to the addition of the makeup water.

Note (4) Continuous recording of total residual chlorine during periods of active chlorination and for 2 hours after recommencing discharge or until chlorine residual reaches an undetectable level.

GENERAL CONDITIONS

G1. No discharge of polychlorianted biphenyl, such as transformer fluid, 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 raw 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.

G3. The effluent limitation for the total combined flow discharged from outfall No. 001 for any particular pollutant, excluding pH, shall be the sum of the amounts for each contributing inplant stream as authorized by the special or general conditions of this permit.

G4. Permittee shall not discharge any effluent which shall cause a violation of any applicable State of Washington Water Quality Criteria or standards contained in WAC 173-201, as they exist now or hereafter are amended, outside the mixing zone whose boundaries shall be:

a) The boundaries in the vertical plane shall extend from the receiving water surface to the riverbed;

b) The upstream and downstream boundaries shall be 50 feet and 300 feet, respectively, from the center line of the outfall; and

c) The lateral boundaries shall be separated by 100 feet.

G5. Excess process water shall not be discharged to the river unless sampling and analysis has demonstrated that the water complies with the applicable regulations on liquid radioactive discharges. Excess process water not meeting these conditions shall be processed in the liquid radwaste

treatment system prior to discharge to the river. The liquid radwaste treatment system shall provide facilities with 24-hour retention capabilities; liquids may be discharged only after sampling and analysis demonstrate that all applicable regulations are complied with at the holding facilities. No other liquid radwaste shall be discharged.

G6. The permittee shall provide an adequate operating staff which is qualified and shall carry out the operation, maintenance, and testing activities required to insure compliance with the conditions of this permit.

G7. Permittee shall handle and dispose of all solid waste material from any waste retention basins or any other source in such a manner as to prevent their pollution of any ground or surface water body. Further, permittee shall not permit leachate from such solid waste material to cause adverse effect on ground or surface water quality.

G8. Whenever a facility expansion, 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 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.

G9. If the toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established 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.

G10. If, for any reason, the permittee does not comply with or will not be able to comply with, any daily maximum effluent limitation specified in this permit, the permittee shall provide the Council with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue and steps being taken to reduce, eliminate and prevent recurrence of the non-complying discharge.

G11. 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.

G12. The diversion from or bypass of any discharge from 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 drainage or runoff would damage any facilities necessary for compliance with the terms and conditions of this permit. The permittee shall promptly notify the Council in writing of each such diversion or bypass in accordance with the procedure specified in condition G-13.

G13. In the event the permittee is unable to comply with any of the conditions of this permit because of a breakdown of waste treatment, equipment or facilities, an accident caused by human error or negligence, electrical power failure, or any other cause, including acts of nature, the permittee shall:

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

b. As soon as reasonably practicable, notify the Council so that an investigation can be made to evaluate the impact and the corrective actions taken and determine additional action that must be taken.

c. Promptly submit a detailed written report to the Council describing the breakdown, the actual quantity and quality of resulting waste discharges, corrective action taken, steps taken to prevent recurrence, and any other pertinent information.

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.

G14. Permittee shall install an alternative electric power source capable of operating any electrically powered pollution control 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 the pollution control equipment by controlling production.

Monitoring

G15. 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 and the Council at the following addresses:

U.S. EPA Region X
1200 6th Avenue
Seattle, WA 98101
Attention:
Permits Branch M/S 521

TPPSEC
Attention:
Executive Secretary
820 East 5th Avenue
Olympia, WA 98504

G16. 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. All samples and measurements made under said program shall be representative of the volume and nature of the monitored discharge.

G17. The permittee shall record each 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.

G18. As used in this permit, the following terms are as defined herein:

a. The "daily maximum" discharge means the total discharge by weight during any calendar day.

b. The "daily average" discharge means the total discharge by weight during a calendar month divided by the number of days in the month that the respective discharges occur. Where less than daily samplings 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 operating day.

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

G19. All sampling and analytical methods used to meet the monitoring requirements specified in this permit shall conform to regulations published pursuant to Section 304g of the Federal Act, or if there is no applicable procedure, shall conform to the latest edition of the following references:

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

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

3) 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 the permittee. The Council shall be notified of each such alternative method approved for use.

G20. Except for data determined confidential under Section 308 of the 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 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 Act.

Other Provisions

G21. 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.

G22. 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 purpose 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.

G23. Nothing in this permit shall be construed as excusing the permittee from compliance with any applicable Federal, State or local statutes, ordinances, or regulations.

G24. 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.

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 Amendment of 1972,
Public Law 92-500

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

Plant Location:
Section 3, 4, T.11N; Secs. 33, 34, T12N: R28E W.M.
North of Richland
Benton County, Washington

Receiving Water:
Columbia River

Discharge location:
Outfall 001
Latitude: 46°28'23"
Longitude: 119°15'50"

Industry Type: Nuclear Steam Electric Generating Plant (WPPSS Nos. 1 & 4)

Water Segment No.:
26-03-00

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

Approved: April 28, 1975

Thomas C. Pogue

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:

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

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS(2)	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Total suspended Solids (lb/day)	241	44	3 times per week	Grab
pH	Between 6.5 and 8.5 at all times		3 times per week	Grab
Oil and Grease (lb/day)	49	22	Weekly	Grab
Flow (GPD)(3)	2.88×10^5	1.73×10^5	Log tank contents(1) prior to discharge	N/A

Note (1) Permittee shall discharge from this source on an intermittent basis.

Note (2) Permittee shall monitor the effluent from the non-radwaste water treatment and liquid radwaste treatment system prior to confluence with cooling tower blowdown.

Note (3) Permittee is allowed on an intermittent basis to discharge subject to the provisions of G5. herein to a maximum of 108,000 GPD additional flow originating from the liquid radwaste treatment systems.

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

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Minimum frequency	Sample Type
Temperature	Note (3)		Continuous	Instantaneous
Total Residual Chlorine (mg/l)	Note (2) 0.1 mg/l		Continuous (4)	Grab
pH	Between 6.5 and 8.5 at all times		Continuous(1)	Instantaneous
Flow (GPD)	1.08×10^7	5.47×10^6	Continuous	Instantaneous

Note (1) Permittee shall include an alarm system for the pH control to provide an indication of any variance from established limits.

Note (2) Upon initiating chlorination of a unit, permittee shall terminate all discharges from the recirculating water system to the receiving water from the unit and not discharge from that unit until the total residual chlorine concentration has been at or below 0.1 mg/l for 15 minutes. For compliance chlorine will be measured at the unit being chlorinated.

Note (3) The temperature of the recirculated cooling water blowdown shall not exceed, at any time, the lowest temperature of the recirculated cooling water prior to the addition of the makeup water.

Note (4) Continuous recording of total residual chlorine during periods of active chlorination and for 2 hours after recommencing discharge or until chlorine residual reaches an undetectable level.

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

PARAMETER	EFFLUENT LIMITATIONS (1)		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Total Iron (lb/day)	2.4	0.84	3 times per day when discharging	Grab
Total Suspended Solids (lb/day)	240	25	3 times per day when discharging	Grab
pH	Between 6.5 and 8.5 at all times		3 times per day when discharging	Grab
Oil and Grease (lb/day)	48	12.6	3 times per day when discharging	Grab
Flow (GPD)	2.9×10^5	1×10^5	Calculated total volume	N/A

Note (1) The daily maximum values indicated are permitted for one time only and provided the discharges are limited to one unit at a time.

D. BOILER BLOWDOWN OF DISCHARGE SERIAL NUMBER 001 PER UNIT

PARAMETER	EFFLUENT LIMITATIONS		MONITORING REQUIREMENTS	
	Daily Maximum	Daily Average	Minimum Frequency	Sample Type
Total Iron (lb/day)	2.1×10^{-4}	2.1×10^{-4}	When discharging	Grab
Total Suspended Solids (lb/day)	2.1×10^{-2}	6.3×10^{-3}	When discharging	Grab
pH	Between 6.5 and 8.5 at all times		When discharging	Grab
Oil and Grease (lb/day)	4.2×10^{-3}	3.2×10^{-3}	When discharging	Grab
Flow (GPD)	25(1)	25	Once a week during plant shutdown	Grab

Note (1) Intermittent discharge contribution during startup, a 30 second discharge once a week at a flow of 50 gpm.

GENERAL CONDITIONS

G1. No discharge of polychlorinated biphenyl, such as transformer fluid, 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 raw 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.

G3. The effluent limitation for the total combined flow discharged from outfall No. 001 for any particular pollutant, excluding pH, shall be the sum of the amounts for each contributing inplant stream as authorized by the special or general conditions of this permit.

G4. Permittee shall not discharge any effluent which shall cause a violation of any applicable State of Washington Water Quality Criteria or standards contained in WAC 173-201, as they exist now or hereafter are amended, outside the mixing zone whose boundaries shall be:

a. The boundaries in the vertical plane shall extend from the receiving water surface to the riverbed;

b. The upstream and downstream boundaries shall be 50 feet and 300 feet, respectively, from the center line of the outfall; and

c. The lateral boundaries shall be separated by 100 feet.

G5. Excess process water shall not be discharged to the river unless sampling and analysis has demonstrated that the water complies with the applicable regulations on liquid radioactive discharges. Excess process water not meeting these conditions shall be processed in the liquid radwaste treatment system prior to discharge to the river. The liquid radwaste treatment system shall provide facilities with 24-hour retention capabilities and liquids may be discharged only after sampling and analysis demonstrate that all applicable regulations are complied with. No other liquid radwaste shall be discharged at the holding facilities.

G6. The permittee shall provide an adequate operating staff which is qualified and shall carry out the operation, maintenance, and testing activities required to insure compliance with the conditions of this permit.

G7. Permittee shall handle and dispose of all solid waste material from any waste retention basins or any other source in such a manner as to prevent their pollution of any ground or surface water body. Further, permittee shall not permit leachate from such solid waste material to cause adverse effect on ground or surface water quality.

G8. Whenever a facility expansion, 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 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.

G9. If the toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established 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.

G10. If, for any reason, the permittee does not comply with or will not be able to comply with, any daily maximum effluent limitation specified in this permit, the permittee shall provide the Council with the following information, in writing, within five (5) days of becoming aware of such condition:

a. A description of the discharge and cause of noncompliance; and

b. 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.

G11. 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.

G12. The diversion from or bypass of any discharge from 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 drainage or runoff would damage any facilities necessary for compliance with the terms and conditions of this permit. The permittee shall promptly notify the Council in writing of each such diversion or bypass in accordance with the procedure specified in condition G13.

G13. In the event the permittee is unable to comply with any of the conditions of this permit because of a breakdown of waste treatment, equipment or facilities, an accident caused by human error or negligence, electrical power failure, or any other cause, including acts of nature, the permittee shall:

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

b. As soon as reasonably practicable notify the Council so that an investigation can be made to evaluate the impact and the corrective actions taken and determine additional action that must be taken.

c. Promptly submit detailed written report to the Council describing the breakdown, the actual quantity and quality of resulting waste discharges, corrective action taken, steps taken to prevent a recurrence, and any other pertinent information.

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.

G14. Permittee shall install an alternative electric power source capable of operating any electrically powered pollution control 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 the pollution control equipment by controlling production.

Monitoring

G15. 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 and the Council at the following addresses:

U.S. EPA Region X
1200 6th Avenue
Seattle, WA 98101
Attention:
Permits Branch M/S 521

TPPSEC
Attention:
Executive Secretary
820 East 5th Avenue
Olympia, WA 98504

G16. 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. All samples and measurements made under said program shall be representative of the volume and nature of the monitored discharge.

G17. The permittee shall record each 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.

G18. As used in this permit, the following terms are as defined herein:

a. The "daily maximum" discharge means the total discharge by weight during any calendar day.

b. The "daily average" discharge means the total discharge by weight 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 consistimg 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 operating day.

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

G19. All sampling and analytical methods used to meet the monitoring requirements specified in this permit shall conform to regulations published pursuant to Section 304g 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 approved 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.

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APPENDIX C

The following changes should be made in the May 17, 1972, certification agreement between the State of Washington and the Washington Public Power Supply system regarding the Construction of Hanford Project No. 2:

a. Add to Section III. H of the Agreement: "The outfall shall include features as required to achieve dilution within the limits prescribed in General Condition 4 of the attached NPDES permit";

b. Replace Section IV. B. in its entirety by the following: "Discharge to the Columbia River shall be done in accordance with the terms and conditions of a valid NPDES permit, which permit is attached hereto. See attachment".