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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
PUGET SOUND POWER & LIGHT)	Docket Nos. STN 50-522
COMPANY, et al.)	STN 50-523
)	
(Skagit/Hanford Nuclear Project))	September 29, 1982
)	

APPLICANTS' RESPONSE TO CFSP'S
FIRST SET OF INTERROGATORIES

On September 10, 1982, the Coalition for Safe Power (CFSP) served "Coalition for Safe Power's Interrogatories to the Applicant-Set 1." Pursuant to 10 CFR § 2.704b, Applicants hereby submit their response to this request for discovery.

Although CFSP's discovery requests are nominally labelled interrogatories, many request that Applicants "provide" certain categories of documents, reports, studies, data, assessments, and calculations. These requests include "interrogatories" numbered 5, 6, 10, 30, 34, 35, 40, 45, 46, 56, 57, 58, 62, 63, 64, 65, 67, 68, 72, 73, 75, 76, 77, 80, 83, 84, 86, 89, 92, 93, and 95. Applicants have interpreted these "interrogatories" as requests for production of documents pursuant to 10 CFR § 2.741 and will respond to them within the time specified in that section of the regulations.

Many of CFSP's discovery requests have such a tenuous relationship to the contentions admitted in this proceeding that they fall beyond the permissible scope of discovery. Nevertheless, in the spirit of cooperation, Applicants have decided to provide substantive responses to some of these requests. The fact that Applicants have so responded should not be construed as an admission of the relevance of the subject matter of these requests to this proceeding or to contentions in this proceeding, nor should it be construed as a waiver of the right to object in the future to the lack of relevance of the subject matter of these requests.

Applicants' substantive response to CFSP's discovery requests is attached hereto. Applicants' objections to several of the discovery requests are provided below.

Objections to Certain Discovery Requests by CFSP

Section 2.740(b)(1) of the Commission's Rules of Practice explicitly limits the scope of discovery in construction permit proceedings to subjects which "relate only to those matters in controversy which have been identified by the Commission or the presiding officer in the prehearing order" Thus, to the extent that a discovery request is not relevant to contentions that have been admitted by a licensing board, the request exceeds the scope of discovery permitted under the Commission's rules. Allied-General Nuclear Services (Barnwell

Fuel Receiving and Storage Station), LBP-77-13, 5 NRC 489, 492 (1977). The Licensing Board's Memorandum and Order of July 6, 1982, p. 8, is fully in accord with this principle, since it only authorizes discovery "as to the issues raised by the contentions which have been accepted by the Board." In light of the direction that discovery must relate to admitted contentions, Applicants object to the following discovery requests by CFSP.

A. Discovery Requests 1 through 4, 7

These discovery requests ask for information regarding Applicants' discussion of fuel and operation and maintenance costs in Section 8.2.2 of the ASC/ER for S/HNP. According to CFSP, these discovery requests pertain to CFSP Contention 29. However, CFSP Contention 29, as admitted by the Licensing Board in its Memorandum and Order of July 6, 1982, only relates to capacity factors, fixed charges, interest rates, and capital costs. Thus, the subject matter of these discovery requests is not relevant to CFSP Contention 29, and Applicants object to responding to these requests.

B. Discovery Requests 11 through 15

These discovery requests ask for information regarding Applicants' possible consideration of constructing one or both of the Pebble Springs units at the same site as S/HNP. CFSP

has not attempted to relate these requests to any admitted contention, and the subject matter has no discernible relevance to any admitted contention. Consequently, Applicants object to responding to these requests.

C. Discovery Requests 16 through 29

According to CFSP, these discovery requests relate to "Attachment to PLN-263, July 16, 1982;" CFSP has not identified any admitted contention to which it believes these requests pertain.

Each of these discovery requests asks for information regarding the possible acquisition of WNP 4 and 5 by Applicants or the basis for a decision by Applicants to proceed with construction of S/HNP. The Licensing Board rejected proposed CFSP Contention 27 on the alternative of acquisition of WNP 4 and 5, and the basis for a decision to proceed with construction of S/HNP has no discernible relevance to any contention admitted by the Licensing Board. Consequently, Applicants object to responding to these questions.

D. Conclusion

For the reasons expressed above, CFSP discovery requests 1 through 4, 7, and 11 through 29 are objectionable, and,

accordingly, Applicants have not provided substantive responses to these requests.

DATED: September 29, 1982

Respectfully submitted,

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Attachment: Applicants' Substantive
Responses to CFSP's
First Set of Interrogatories

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
PUGET SOUND POWER & LIGHT COMPANY,)	DOCKET NOS.
et al.)	
)	
(Skagit/Hanford Nuclear Project,)	STN 50-522
Units 1 and 2))	STN 50-523
)	

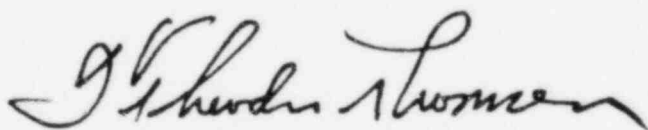
CERTIFICATE OF SERVICE

I hereby certify that the following:

APPLICANTS' RESPONSE TO CFSP'S
FIRST SET OF INTERROGATORIES

in the above-captioned proceeding have been served upon the persons shown on the attached list by depositing copies thereof in the United States mail on September 29, 1982 with proper postage affixed for first class mail.

DATED: September 28, 1982



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APPLICANTS'
SUBSTANTIVE RESPONSES TO
CFSP's FIRST SET OF INTERROGATORIES

SEPTEMBER 29, 1982

Interrogatory 8

- Q. In table 8.2-1 of the ASC/ER, the average site labor pay rate is given in May, 1973 dollars. What is the estimated rate in 1984 dollars?
- A. Table 8.2-1 contains an error; the actual figures should have been \$11.53/hr stated in January 1974 dollars. The average site labor rate in January 1974 dollars is \$11.53/hr. The estimated rate in June 1984 dollars, by converting from January 1974 dollars to December 1980 dollars using the Consumer Price Index and from January 1981 dollars to June 1984 dollars by assuming an 8% annual inflation rate, is \$28.25/hr.

Interrogatory 9

- Q. Provide justification for using this rate.
- A. The labor wage rate of \$11.53/hr (January 1974 dollars) was not used to calculate the capital costs for the S/HNP but was provided in Table 8.2-1 of the ASC/ER to satisfy the guidance in U.S. Nuclear Regulatory Commission Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Stations," Rev. 2

(July 1976), which states that average site labor pay rate should be provided for the month and year of the NSSS order. The actual labor wage rate which was used to calculate the capital costs in Table 8.2-1 was \$20.87/hr (1980 dollars). This figure is a weighted average of 1980 wage rates of various manual crafts expected to be utilized in constructing the S/HNP (weighted by the respective percentage of total manual craft labor hours for each manual craft).

Interrogatory 31

- Q. Why is this species [sand roller] not discussed in the Applicant's ASC/ER?
- A. The sand roller is discussed in the ASC/ER in Appendix K and in Table 2.2-19. It has only been collected in limited numbers in the Hanford Reach of the Columbia River, and it does not have sport or commercial value. A more extensive discussion was not presented because, using the criteria of Section 2.2.2.6, the sand roller is not an important species for S/HNP (see Table 2.2-20 of the ASC/ER).

Interrogatory 32

- Q. What effect does the Applicant expect construction and operation will have upon this species?
- A. The Applicants expect that construction and operation of S/HNP will have minimal effect on the abundance and distribution of this species.

Interrogatory 33

Q. Discuss the basis for this conclusion.

A. Construction impacts to fish could result from excavation of the river bottom for the S/HNP intake and discharge system. However, any impacts are expected to be minimal because only a relatively small portion of the river will be affected. Additionally, these effects would only be transient and any displacement of fish temporary. See Section 4.1.2.2 of the ASC/ER.

Operational impacts could result either from the discharge system or through entrainment or impingement resulting from the intake system. The intake is designed to minimize the entrainment of aquatic organisms, hence the impact due to intake effects are expected to be insignificant (see ASC/ER Section 5.1.3.1). Because of the relatively small volume of water withdrawn from the river by the S/HNP intake system (maximum of 0.26 percent of total flow) any effects to sand roller should be negligible. In addition, ichthyoplankton collections near the intake/discharge location have indicated that larval sand roller are not present in the midstream drift. Potential exposure durations to passively drifting organisms in the S/HNP discharge plume are insufficient to cause mortality to even the most sensitive fish species, including salmonids. Because of their small size at maturity and cryptic nature, any sand roller present at midstream would be mainly restricted to the river bottom where the discharge plume is barely measurable.

Interrogatory 36

- Q. Does the Applicant concur with the State of Washington, Department of Game assumption (stated in comments to DEIS, 6-28-82) that "adjacent habitats [of displace (sic) birds] are assumed to be at carrying capacity"?
- A. Carrying capacity is determined both by characteristics of the environment and characteristics of the population being considered. It is a difficult task to determine whether a particular habitat is supporting various wildlife populations at their carrying capacity, and the Applicants do not know whether the potential impact area is at its carrying capacity for any species of bird or other wildlife. However, it is a common practice among ecologists to assume that the carrying capacity has been reached, especially when evaluating impacts associated with habitat disturbance. Therefore, the Applicants believe that the assumption by the Department of Game regarding the carrying capacity of the area is conservative for estimating the potential impacts of the S/HNP.

Interrogatory 37

- Q. If not, why not?
- A. Not applicable. See answer to Interrogatory 36.

Interrogatory 38

- Q. If yes, does the Applicant agree that wildlife will be lost?
- A. As stated on page 4.1-12 of the ASC/ER for S/HNP, the Applicant agrees that some wildlife may be lost if the potential impact area is in fact at or near its carrying capacity.

Interrogatory 39

- Q. Provide quantified projections of this loss.
- A. If the potential impact area is at or near its carrying capacity, and if any wildlife is lost as a result thereof, it may be expected that such a loss will be minor due to the small percentage of available habitat affected by construction and the loss should not affect the wildlife communities as a whole. In view of such minor losses, quantified projections are not necessary in order to reach a judgement concerning significant environmental impact.

Interrogatory 41

- Q. What efforts will be taken by contractors and subcontractors to minimize damage of habitat and biota during construction of the S/HNP?
- A. Measures to minimize damage of habitat and biota during construction will be described in detail in the Construction Impact Control Program (CICP). A summary

description of the Construction Impact Control Program (CICP) for S/HNP is provided in Section 4.5 of the ASC/ER. A detailed description of the CICP will be submitted to the Energy Facility Site Evaluation Council for its review and approval prior to commencement of construction activities.

Interrogatory 42

Q. Describe and quantify the location, population and propagation habits of Rorippa (sic) var. columbiae, Astragalus sclerocarpus, Cryptantha leucophae, and tarragon in the area to be affected by the construction and operation of the S/HNP.

A. a. Rorippa calycina var. columbiae

This species of cress occurs from California north to Washington (Hitchcock et al. 1969) and grows on gravelly to partially silty, gently sloping riverbank that is frequently wetted or submerged. This habitat typically occurs along the Hanford Reach of the Columbia River. In the Reach, not all suitable habitat is occupied, but the species has been located at 100 F slough, Hanford Slough, and scattered for approximately two miles downstream of the old Hanford townsite. The species typically occurs in groups of two to five individuals, with the groups widely separated where the habitat is suitable. This species is a rhizomatous perennial, and thus successful seed set and seedling establishment is not necessary each year for the population to continue; the species can be assumed to propagate by seed floating in the water and/or by the rhizomes.

This species was found in 1980 at the Hanford Slough, just north of the intake location. The species also was found during surveys on April 10, 1981 from the Hanford Slough downriver of the intake location. The population was limited to a narrow strip of shoreline above the winter high water line on cobble and sand substrate. Over 100 small plants were seen scattered along about one mile of shoreline. They were in bloom and some had a few nearly mature fruits. The entire population was underwater at the next visit, however, and no voucher specimen was available for collection.

b. Astragalus sclerocarpus

This species (Hitchcock et al. 1969) occurs on both sides of the Columbia River from Oregon to British Columbia on dunes and sandy barrows. This species has been observed near Priest Rapids dam with collections from Island 20 near Richland, WA, and the 200 West Area of the Hanford Reservation.

It has not been seen or collected in the vicinity of the S/HNP. This species is not evenly distributed through its potential habitat, but rather is clumped in distribution. It is perennial and presumably propagates by seeds.

c. Cryptantha leucophaea

This species has been collected on the sand dunes approximately 1 mile north of the WNP #2 Site. The dunes are along the Columbia River, Benton County, and rise as much as 50 feet above the river. The specific site of

this species is well above and inland from the river. The individual plants occur scattered over the surface of the dunes. Propagation of this perennial species is by seeds.

- d. Tarragon or Artemisia dracunculus, according to Hitchcock et al. 1969, occurs over a wide area from plains to moderate elevations in the mountains, from Yukon and British Columbia east of the Cascades to Baja, California, and east to Illinois, Texas and New Mexico.

This species has been recorded at Hanford Slough and Lake Wallula. This perennial species propagates by seed as it is not rhizomatous.

Reference:

Hitchcock, Cronquist, Ownbey and Thompson. 1969. Vascular Plants of the Pacific Northwest. 5 vols. University of Washington Press.

Interrogatory 43

- Q. Describe and quantify the effect of a major catastrophic accident on the population of the terrestrial and aquatic populations of rare, threatened and endangered species that exist with (sic) the fifty mile zone of the S/HNP.
- A. There are no rare, threatened or endangered aquatic species within fifty miles of the S/HNP. In any case, as Section 7.4.8 of the ASC/ER demonstrates, only trivial amounts of radionuclides would be expected to reach the Columbia River

via groundwater transport following a hypothetical accident at the S/HNP. Similarly, deposition of radionuclides in the Columbia River from a passing radioactive plume created as a result of a hypothetical accident at S/HNP is also considered to be trivial. Consequently, an accident at the S/HNP would not severely affect any aquatic species.

There are two federally listed threatened or endangered animal species (bald eagle and peregrine falcon) within fifty miles of the S/HNP. Neither of these birds reproduce in the area, but occur as transients during part of the year. About 40 bald eagles overwinter at Hanford out of a total Washington State population of over 2,500. There are an estimated 100 peregrine falcons that overwinter in Washington State. The species is only occasionally observed in the Christmas bird counts at Hanford.

There are no plant species found within fifty miles of the S/HNP which are currently listed as endangered or threatened by the U.S. Fish and Wildlife Service, though one species (Rorippa calycina var. columbiae) is designated as a candidate for listing. There are several species located in the counties surrounding the S/HNP which are listed by the Washington National Heritage Program as endangered, threatened or sensitive.

The dominant pathway for radioactivity from the hypothetical "Class 9 accident" to the animal and plant species in question is airborne. In the ring from 10 to 17.5 miles from the S/HNP, the maximum first week dose calculated for all accidents and under the most adverse weather conditions was 1,134 rad for plants and 2,079 rad for birds. The dose rate thereafter would be drastically lower.

Data for closer rings are not available. Mean doses at other distances would decrease monotonically with distance. The sector of the ring in which this dose might occur is very conservatively estimated to not exceed 45°. The probability of such a dose is estimated to be 3.9×10^{-9} /reactor year.

The average lethal radiation exposure (acute exposure resulting in 50% mortality) for birds is approximately 700 rads. Thus, if an individual bald eagle or peregrine falcon were to reside for one week within the 45° sector of the 17.5-mile ring affected by the worst-case hypothetical accident at the S/HNP, it might receive an exposure almost three times the average lethal dose. The actual effect upon these species as a result of such an accident is more difficult to estimate and would depend upon such factors as the number of individual birds in the area, their precise locations and their time of residence at each location.

Vascular plants are more radioresistant than animals. In general, coniferous trees are more sensitive than deciduous trees which are more sensitive than shrubs. Literature values indicate that the acute exposure required to produce severe effects for shrubs is about 5,000 roentgens. These data indicate that lethal effects to rare, threatened or endangered plants would not be expected to occur within the 10- to 17.5-mile ring as a result of the worst-case accident at the S/HNP.

Interrogatory 44

Q. What would the overall effect be on the worldwide populations of these species.

- A. Due to the limited number of bald eagles and peregrine falcons which have been occasionally observed in the area around the site for the S/HNP, no adverse effect on the worldwide populations of these species would occur as a result of the worst-case hypothetical accident at the S/HNP, even if it were assumed that any individual birds in the area would be affected by such an accident. Similarly, given the relatively low radio-sensitivity of plants and the fact that only a small fraction of any species would be affected, no adverse effect on the worldwide populations of any rare, threatened or endangered species of plant would occur as a result of the worst-case hypothetical accident at the S/HNP.

Interrogatory 47

- Q. Explain why the Applicant believes that construction will be confined to a one acre area in the old Hanford townsite.
- A. The Applicants have never stated that construction will be confined to one acre in the old Hanford townsite; they have stated that "about one acre of riparian vegetation near the intake/discharge location will be disturbed." The Applicants believe that disturbance of riparian vegetation can be limited to one acre because the riparian area required for trenches for the intake and discharge pipeline will be limited, as discussed in the answer to Interrogatory 48.

Interrogatory 48

- Q. What calculations have been done (sic) to arrive at this conclusion?

- A. The riparian vegetation at the old Hanford townsite forms a strip along the river which is less than 100 feet wide. A total corridor width of about 440 feet provides adequate access for excavation and associated construction activities for both the permanent intake and discharge system and the temporary intake system. Consequently, the area of riparian vegetation which may be disturbed is less than 44,000 square feet, or about one acre.

Interrogatory 49

- Q. What plans will be implemented to ensure that construction will be confined to a one acre area?
- A. Plans for limiting disturbance of vegetation are part of the Construction Impact Control Program (CICP). A summary description of the CICP for S/HNP is provided in Section 4.5 of the ASC/ER. Details of this program have not yet been formulated. A detailed description of the CICP will be submitted to the Energy Facility Site Evaluation Council for its review and approval prior to commencement of construction activities.

Interrogatory 50

- Q. Specify and quantify the projected effect of this plan in terms of biota and habitat.
- A. By containing disturbance of riparian vegetation near the intake/discharge location to one acre, the effects on biota and habitat are obviously small and limited.

An individual count of plants, etc., in this small area is not necessary to judge the significance of the environmental impact.

Interrogatory 51

Q. What is the largest are (sic) the Applicant believes could be affected by construction in the old Hanford townsite without causing irreversible harm to the ecology?

A. Given the nature of the construction proposed to be conducted by the Applicants in the old Hanford townsite, no irreversible harm to the ecology is expected. It should be noted that virtually all of the old Hanford townsite is disturbed from earlier activity. To the extent that CFSP is asking the Applicants to speculate whether some other type of hypothetical construction could cause irreversible impacts, the Applicants cannot provide a response without information regarding the nature of the hypothetical construction. Moreover, such speculation is not required to assess impacts from construction activities which will actually take place.

Interrogatory 52

Q. What would the anticipated effect on the populations of aquatic and terrestrial biota and habitat be from this level of construction?

A. Not applicable. See answer to Interrogatory 51.

Interrogatory 53

Q. Provide calculations to support this conclusion.

A. Not applicable. See answers to Interrogatory 51.

Interrogatory 54

Q. What is the smallest area the Applicant could utilize for construction in the old Hanford townsite?

A. The Applicants have considered environmental impacts from construction activities in the old Hanford townsite area based on design characteristics of the intake and discharge structures and utilization of reasonable and prudent construction practices. No significant adverse environmental impacts will result from these activities. There has, therefore, been no reason to identify the "smallest" area which could be utilized for construction. However, it should be noted that every practicable effort will be made to minimize removal of vegetation and to assure that any adverse impacts upon wildlife will be minimal. See ASC/ER Section 4.5.5.4.

Interrogatory 55

Q. What would be the corresponding (sic) impact on biota and habitat?

- A. See the response to Interrogatory 54. Impacts upon biota and habitats from construction in the old Hanford townsite are described in Section 4.1.1 of the ASC/ER, pp. 4-11 to 4-13.

Interrogatory 59

- Q. How will scheduling of construction minimize the damage to aquatic life?
- A. Construction of the in-river portion of the permanent system intake and discharge system are planned to occur during the period from July to October, or after the emergence and outmigration of area juvenile chinook salmon populations and prior to spawning of adult fall chinook salmon. Consequently, impacts upon chinook salmon should be minimized. Additionally, since this period corresponds to the historical low flow of the Columbia River, release and dispersion of material from in-river construction should be limited, thereby further reducing any sedimentation impacts. See ASC/ER Section 4.1.2.2.

Interrogatory 60

- Q. Quantify the projected effect of construction upon aquatic life.
- A. No significant long-term adverse effects are expected on aquatic life of the Hanford Reach from construction of the intake and discharge facilities. Excavation operations will result in a temporary loss of periphyton and benthic fauna. Additionally, increases in suspended and settleable materials from excavation and backfill activities may reduce numbers of benthic organisms immediately

downstream of construction. All construction effects, however, are expected to only be transient with recolonization of benthic organisms occurring. Resident fish population may be displaced during the construction activity with no long-term effects on distribution and productivity expected. Migrating fish will have more than 60% of the river available for passage. The Applicants have not specifically calculated the number of individuals of each species which could be affected by construction of the intake and discharge structures since these impacts are obviously minor and temporary. Quantification is not necessary to conclude that there will be no significant adverse environmental impact.

Interrogatory 61

- Q. Provide the basis for the statement in ASC/ER Section 4.1 that the effects of river construction on salmon is (sic) "not expected".
- A. Aerial spawning surveys of the Hanford Reach conducted annually since 1947 have indicated lack of fall chinook salmon spawning in the vicinity of the proposed construction location of the intake/discharge system (RM 361.5). The closest spawning area is 7.5 miles downstream of the site and is not expected to be affected by siltation from excavation of the intake and discharge pipeline. These facts together with the timing of the excavation provide a basis for the conclusion that construction of S/HNP should not affect spawning of the fall chinook salmon.

Fall chinook salmon juveniles from the Hanford Reach are abundant in nearshore areas from March through June, but migrate downstream from the S/HNP Site in June and July. Due to the construction schedule and the seasonal movement

patterns of salmonid populations, migrants should be unaffected by planned construction activity.

See also answers to Interrogatories 59 and 60.

Interrogatory 66

- Q. What is the basis for concluding that thermal, chemical and radioactive discharges and construction on the river would not impact negatively upon these species [giant Columbia River limpet and the great Columbia River spire snail]?
- A. The giant Columbia River limpet and the great Columbia River spire snail are benthic organisms. It is conceivable that in-river excavation for the intake and discharge pipeline might destroy some individuals of these species and that deposition of settleable material immediately downstream of the excavation may affect other individuals. However, the impact area is expected to be small (as described in Section 4.1.2.2 of the ASC/ER) and no adverse impact is expected on the Hanford Reach communities of these species. As described in Section 5.1.3.2.3 of the ASC/ER, thermal discharges from S/HNP are expected to have no adverse impact upon benthic organisms due to minimal temperatures differences at the river bottom. As described in Section 5.2.3 of the ASC/ER, radioactive discharges from S/HNP are not expected to have any perceptible effect upon aquatic biota due to the small doses which might be received relative to background doses. As described in Section 5.3.1.2, benthic organisms immediately downstream may be adversely affected by chemical discharges from S/HNP but, since the

total impact area is relatively small, there should be no impact upon the Hanford Reach communities of these species.

Interrogatory 69

- Q. Why was this subject no (sic) discussed in ASC/ER Section 2.2.2.9?
- A. Potential thermal, chemical and radioactive impacts upon the giant Columbia River limpet and great Columbia River spire snail as a result of construction and operation of S/HNP were not discussed in ASC/ER Section 2.2.2.9 because the purpose of Section 2 of the ASC/ER was to provide background information regarding the Site and Associated Areas and not to discuss potential impacts.

Interrogatory 70

- Q. What incentives does the Applicant propose to offer contractors and subcontractors (sic) to cause them to use every effort to minimize damage to the habitat and biota of the S/HNP construction site?
- A. A summary description of the Construction Impact Control Program (CICP) for S/HNP is provided in Section 4.5 of the ASC/ER. Details of this program, such as whether the Applicants will offer certain incentives to contractors, have not been formulated as yet. A detailed description of the CICP will be submitted to the Energy Facility Site Evaluation Council for its review and approval prior to commencement of construction activities.

Interrogatory 71

- Q. What types of chemical erosion controls might be used by the Applicant?
- A. As stated in Section 4.5.5.2 of the ASC/ER, chemical stabilizing agents may be used to control wind erosion after a review of the impacts of any toxicity. These agents might be used in areas where grading or gravel covering may not be sufficient to control erosion. No specific chemical type or brand of chemical stabilizing agent has been selected for use or is receiving special consideration at this time. Chemical erosion control will be part of the Construction Impact Control Program. Brands of chemical stabilizing agents which could be used to control wind erosion include, but are not limited to, Coherex by WIDCO Chemical Corporation, Johnson March SP Compound, Dowell Binder, Roadbinder by Flambeau Paper Company, and Pentron DG by Apollo Chemical Corporation. A detailed description of the CICP will be submitted to the Energy Facility Site Evaluation Council for its review and approval prior to commencement of construction activities.

Interrogatory 74

- Q. What is the basis for the statement in Section 4.1.1 of the ASC/ER that the effect on the raptor population from construction of the S/HNP is "expected to improve" and that the effect on curlews will "probably be not lasting"?
- A. Section 4.1.1 of the ASC/ER does not contain the statements quoted above, and the Applicants do not know what this Interrogatory is intended to refer to.

Interrogatory 78

Q. What is the basis for the Applicants conclusion that the operation of transmission lines will not have a significant effect on the avifauna?

A. In those cases where significant effects on avifauna from transmission lines have been observed, the transmission lines generally were located near large concentrations of avifauna which were migrating through the area — which is not the case at S/HNP. Most studies indicate that transmission lines have not significantly affected avifauna, and in fact no significant impacts have been noticed from existing transmission lines on the Hanford Reservation. Since the transmission lines for S/HNP will be designed according to criteria in "Suggested Practices for Raptor Protection on Power Lines, the State of the Art in 1981," Raptor Research Report No. 4, Raptor Research Foundation, Inc. (1981), no significant impact on avifauna is expected. It should be noted that this does not mean that an individual bird will not occasionally be affected by the transmission lines, but only that the transmission lines will not affect the population as a whole.

Interrogatory 79

Q. Provide any calculations done by the Applicant to support this.

A. The Applicants performed no calculations to support the analysis presented in the answer to Interrogatory 78.

Interrogatory 81

- Q. Is it the Applicants position that the existing radiological burden should not be taken into account in assessing the impact of the S/HNP?
- A. The Applicants have no position on whether the existing radiological burden should or should not theoretically be taken into account in assessing the impact of S/HNP. See also answer to Interrogatory 82.

Interrogatory 82

- Q. Discuss the basis for this answer.
- A. The Applicants will make any assessment required by law or necessary for prudent and responsible decision-making. It may be noted that the Applicants have taken, and will take, the existing radiological burden into account in assessing the potential impacts of S/HNP. Thus, for example, Section 2.8 of the ASC/ER is devoted to the subject of the existing radiological burden in and around the Site; Section 6.1.5 of the ASC/ER describes the Applicants' preoperational monitoring program for ascertaining the level of existing radioactivity in the area in and around the Site; and Sections 5.2.4.4 and 7.1 discuss radiological impacts from operation of S/HNP and impacts from background radiation.

Interrogatory 85

- Q. Which theory of dose-effect of ionizing radiation does the Applicant subscribe to: linearity, linearity with threshold, supra-linearity or diminished effects at low doses?
- A. The Applicants do not subscribe to any particular theory of health effects of ionizing radiation. There are several theories, each of which has different supporting evidence and different numbers of supporters, and it is not possible to discount absolutely any of these theories given the present level of information. However, the Applicants do believe that the linear theory of health effects presented in the Draft Environmental Statement for S/HNP (pp. 4-185 and 187) offers a reasonable basis for calculating the expected effects from S/HNP.

Discovery Request 87

- Q. If Applicant does not agree that the number of radiation induced cancers is directly proportional to the dose (sic) of radiation (linear without threshold), provide copies of all documents that refute reports that conclude that this statement is true.
- A. Not applicable (see answer to Interrogatory 85).

Interrogatory 88

- Q. What number of annual fatal and non-fatal cancers does the Applicant predict from the doses (to 0-50 mile population) estimated in ASC/ER Tables 5.2-5, 5.2-6 and 5.2-8?
- A. The Draft Environmental Statement for S/HNP, 4-185, utilizes a health effects factor of 135 potential cancer deaths per 10^6 person-rem and estimates that there may be 1.5 to 2 times the number of non-fatal cancers as there are fatal cancers. Using these factors as a reasonable basis for estimating health effects from S/HNP, the Applicants have calculated the following health effects from Tables 5.2-5, 5.2-6, and 5.2-8 of the ASC/ER:

Table 5.2-5 - Total Effects to 0-50 Mile Population (liquid radioactive effluents)
 6.90×10^{-2} man-rem/yr-unit \times 135 fatal cancers/ 10^6 man-rem = 9.3×10^{-6} fatal cancers/yr-unit

6.90×10^{-2} man-rem/yr-unit \times 135 fatal cancers/ 10^6 man-rem \times 1.5 to 2 non-fatal cancers/fatal cancers = 14.0 to 18.6×10^{-6} non-fatal cancers/yr-unit

Table 5.2-6 - Total Effects to 0-50 Mile Permanent Population (radioactive atmospheric effluents)

5.04×10^{-1} man-rem/yr-unit \times 135 fatal cancers/ 10^6 man-rem = 68.0×10^{-6} fatal cancers/yr-unit

5.04×10^{-1} man-rem/yr-unit \times 135 fatal cancers/ 10^6 man-rem \times 1.5 to 2 non-fatal cancers/fatal cancers = 102.1 to 136.1×10^{-6} non-fatal cancers/yr-unit

Table 5.2-6 - Total Effects to 0-50 Mile Transient Population (radioactive atmospheric effluents)

2.25×10^{-3} man-rem/yr-unit x 135 fatal cancers/ 10^6 man-rem = 0.3×10^{-6} fatal cancers/yr-unit

2.25×10^{-3} man-rem/yr-unit x 135 fatal cancers/ 10^6 man-rem x 1.5 to 2 non-fatal cancers/fatal cancers = 0.46 to 0.6×10^{-6} non-fatal cancers/yr-unit

Table 5.2-8

No health effects estimates have been presented for this table since this table does not provide any population dose estimates for the area 0-50 miles from the S/HNP.

Discovery Request 89

Q. Provide all calculations to support this result.

A. See answer to Interrogatory 88.

Interrogatory 90

Q. What studies does Applicant rely upon to support this position?

A. See answer to Interrogatory 88. As the Draft Environmental Statement for S/HNP notes on pages 4-185 and 4-187, studies by the National Academy of Sciences Advisory Committee on the Biological Effects of Ionizing Radiation (BEIR I and BEIR III), the International Commission on Radiological Protection (ICRP, 1977),

the National Council on Radiation Protection and Measurement (NCRP, 1975), and the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR 1977), support the risk estimates which were used to calculate health effects in the answer to Interrogatory 88. A more complete citation to these studies is provided in Section 9 of the Draft Environmental Statement.

Interrogatory 91

- Q. Why does the Applicant not include in utero doses in ASC/ER Table 5.2-4.
- A. In preparing the ASC/ER, the Applicants generally adhered to the guidance and format for environmental reports which is described in U.S. Nuclear Regulatory Commission Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Stations," Rev. 2 (July 1976). In particular, Table 5.2-4 of the ASC/ER was based upon Section 5.2.4.2 of Regulatory Guide 4.2, which states that doses from gaseous pathways should be calculated in accordance with U.S. Nuclear Regulatory Commission Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I" (Oct. 1977). Regulatory Guide 1.109 only provides information for calculating doses to adults, teenagers, children and infants. Consequently, Table 5.2-4 of the ASC/ER does not include in utero doses.

Interrogatory 94

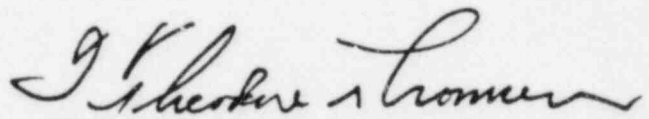
- Q. Provide an assessment of the effects of a nuclear accident on the operability of the Fast Flux Test Facility, WPPSS Nuclear Projects Nos. 1 and 2.
- A. Nuclear accidents within the design basis of S/HNP would have a negligible effect on the operability of the facilities in question. At most, temporary interruption of their productive use might occur, as a precautionary measure, while it is determined that the S/HNP accident has been controlled and the FFTF and WPPSS facilities unaffected.

Hypothetical Class 9 accidents, beyond the design basis, of the type analyzed in Section 7.4 of the Application for Site Certification Environmental Report, however, could conceivably result in some loss of productive use. The duration of this inoperability would depend on the severity of the accident in terms of radionuclide releases and meteorological conditions (e.g., wind speed/direction, atmospheric stability, and rainfall). There is a considerable capacity to recover the use of these facilities by means of decontamination and access control since nuclear plants inherently have facilities, equipment, and trained personnel to cope effectively with radioactive environments.

AFFIRMATION

The undersigned affirms that he is one of the attorneys for Applicants in this proceeding, that the foregoing substantive responses were prepared under his supervision, and that these responses are true and correct to the best of his knowledge and belief.

DATED: September 29, 1982

A handwritten signature in cursive script, reading "F. Theodore Thomsen". The signature is written in dark ink and is positioned above a horizontal line.

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