UTILITY Washington Public Power Supply Sys

SITE WNP-2

ENCLOSURES Answers to Questions

WASTE MANAGEMENT QUESTIONS

This portion of the questionnaire is designed to gather information about the waste management practices in use today, as well as those techniques, practices and programs which may be planned, taking into consideration the High Level Waste Repository and facilities developed pursuant to the Low Level Radioactive Waste Policy Amendments Act of 1985. The information is relevant to both the remaining period of the current operating license and for the license renewal period. Since several of the questions concern projections into the renewal term (an additional 20 years beyond the original licensing term), utilities which have not yet considered license renewal may not be able to answer these questions. Most questions should be answered in 2 or 3 sentences; some may take a few paragraphs.

One survey form should be completed for each site. In some instances, a utility may choose to respond for the entire site, in other instances it may elect to respond separately for each unit on a site because of varying waste management practices or techniques. In all cases, please indicate if responses apply to more than one unit.

Information filed with your state compacts or LLRW management agency may prove a useful reference when completing this portion of the questionnaire. Based on our pilot study, the Waste Management questions should take approximately 8 man-hours to answer.

Spent fuel questions:

Which of the following <u>current</u> techniques for at-reactor storage are you using and how?

A. Re-racking of spent fuel.

The plant was originally constructed with high density spent fuel storage racks. No re-racking is envisioned.

B. ~~Control rod repositioning.~~
C. Above ground dry storage.
D. Longer fuel burnup.
E. Other (please identify).

2. Do you plan on continuing the use of these current techniques for at-reactor storage of spent fuel during the remaining time of your operating license or do you expect to change or modify them in some way?

Expect to modify. Anticipate construction of above ground storage.

3. Which of the following techniques for at-reactor storage do you anticipate using until off-site spent fuel storage becomes available and how?

A. Re-racking of spent fuel.
B. Control rod repositioning.
(C) Above ground dry storage.
D. Longer fuel burnup.
E. Other (please identify).

4. Will the techniques described above be adequate for continued at-reactor storage of spent fuel for the operating lifetime of the plant, including a 20-year period of license renewal, or are you developing other plans? Not currently making other plans.

5. Do you anticipate the need to acquire additional land for the storage of spent-fuel for the operating lifetime of the plant, including a 20-year period of license renewal? If so, how much land? When would this acquisition occur? Where? (if answer is "yes", 3-4 sentences)

No

6. Do you anticipate any additional construction activity on-site, or immediately adjacent to the power plant site, associated with the

continued at-reactor storage of spent fuel for the operating lifetime of the plant, including a 20-year period of license renewal? (yes/no)

7. If you answered yes to question 6, briefly describe this construction activity (e.g., expansion of fuel storage pool, building above ground dry storage facilities)
Building above ground dry storage facilities.

B. Low-level radioactive waste management questions:

1. Under the current scheme for LLRW disposal (i.e. LLRW Policy Amendments Act of 1985 and regional compacts) is there currently or will sufficient capacity for wastes generated during the license renewal period be available to your plant(s)? If so, what is the basis for this conclusion? Yes, we are resident in a sited state (WA).

2. If for any reason your plant(s) is/are denied access to a licensed disposal site for a short period of time, what plans do you have for continued LLRW disposal? We would send to alternate site (Beatty, NV).

3. In a couple of pages, please describe the specific methods of LLRW management currently utilized by your plant. What percentage of your <u>current</u> LLRW (by volume) is managed by:

A. Waste compaction? ~55%
B. Waste segregation (through special controls or segregation at radiation check point)? *0
C. Decontamination of wastes? 0
D. Sorting of waste prior to shipment? 0
E. Other (please identify) Resin Dewatering 45%

* See note on question B.4 (Page 4)

WASTE MANAGEMENT QUESTIONS (cont.)

4. In a couple of pages, please describe the anticipated plans for LLRW management to be utilized by your plant(s) during the remainder of the operating license and through the license renewal term. What percentage of your anticipated waste (by volume) will be managed by:

   A. Waste compaction? 25%
   B. Waste segregation (through special controls or segregation at radiation check points)? N/A*
   C. Decontamination of wastes? 5%
   D. Sorting of waste prior to shipment? 25%
   E. Other (please identify) 45%

*Clean waste from within RCA is currently segregated in color coded bags and checked with a bag monitor prior to disposal as clean waste. Not considered Rad-waste.

5. Do you anticipate the need to acquire additional land for the storage of LLRW for the operating lifetime of the plant, including a 20-year period of license renewal? If so, how much land? When would this acquisition occur? Where? (if answer is "yes", 3-4 sentences)

   No

6. To provide information on the timing of future low-level waste streams, if you answered yes to question ~~#5~~ 9, over what periods of time are these activities contemplated?

7. Do you anticipate any additional construction activity, on-site, or immediately adjacent to the power plant site, associated with temporary LLRW storage for the operating lifetime of the plant, including a 20-year period of license renewal? (yes/no)

8. If you answered yes to question 7, briefly describe this construction activity (e.g., storage areas for steam generator components or other materials exposed to reactor environment).

   Anticipate construction of Warehouse space for storage of large LLRW components such as moisture separator reheater tube bundle and low pressure turbines.

9. To provide information on future low-level waste streams which may effect workforce levels, exposure, and waste compact planning, do you anticipate any major plant modifications or refurbishment that are likely to generate unusual volumes of low-level radioactive waste prior to, or during, the relicensing period for the plant? If so, please describe these activities. Also, what types of modifications do you anticipate to be necessary to achieve license renewal operation through a 20-year license renewal term?

Anticipate contracting for disposal of large turbine components and MSRs.

C. Mixed low-level radioactive waste question:

1. If your plant generates mixed LLRW, how is it currently being stored and what plans do you have for managing this waste during the license renewal period?

This question not applicable per June 15, 1990 NUMARC letter.

AQUATIC RESOURCE QUESTIONS

1. **Intake/Discharge System Modifications**

   There have been no modifications to the intake or discharge system since license issuance. An operational change which was not anticipated is the operation of the condenser cooling system at 12 cycles of concentration. At the licensing stage it was planned that the system would be operated between three and ten cycles and at an average of five cycles. Operation at 12 cycles reduces the discharge flow rate and increases constituent concentrations.

2. **Impacts on Aquatic Resources**

   This question asks for information on aquatic resource impacts and discharge permit violations. These subjects are not necessarily related. Our plant has had no measurable impact on aquatic resources, but has had two minor permit violations (re: pH and TRC limitations). These were not related to plant start-up, but the pH problem in May 1989 was related to special monitoring arrangements during an outage.

3. **NPDES Permit Changes**

   There have been no substantial changes to the effluent limitations since the start of operation. Four static bioassays using steelhead trout and salmon were conducted in 1985 per the terms of the permit. These demonstrated a lack of effluent toxicity. Another permit condition required documentation that chlorine usage was minimized; this was satisfied early this year. The permit is up for renewal in September 1990. The regulatory agencies have said they will require more extensive bioassays and more chemical analyses (primarily metals) of the effluent.

4. **Aquatic Monitoring**

   An aquatic environmental monitoring program is conducted per agreements with the State Energy Facility Site Evaluation Council (EFSEC). When plant operation began the program included benthic macrofauna, periphyton, fish impingement and entrainment studies, fish bioassays, and water quality. Because no impacts or trends have been identified through these observations, the program scope has been reduced with EFSEC's concurrence. It now includes only water quality and occasional observations for impingement. As noted in the response to Question 3, we expect to increase our program in the area of biomonitoring and water quality analyses.

5. **Entrainment and Impingement**

These impacts are minimized by location and design. The intake screens are perforated (3/8"holes) cylindrical pipes (42" dia) oriented parallel to the river flow. The two torpedo-shaped screens are located 200+ from the shore and river velocities range from 2.5 to 6 fps. An extensive set of entrainment tests was conducted in 1979/1980 and 1985 with no evidence of fish entrainment. Periodic observations of the intake screens by divers have disclosed no impinged fish.

6. **Changes to Aquatic Habitat**

There have been no changes to aquatic habitat in the vicinity of the plant.

7. **Aquatic Resource Use Impacts**

Boaters must use caution in the vicinity of the intake to avoid the marker buoys. No other impacts are evident.

8. **Other Sources of Impacts**

Irrigation withdrawals and return flows represent the most significant source of impact. The closest other industrial users are approximately 40 miles upstream and six miles downstream.

9. **Section 316(a) and (b) Determinations**

There have been no Section 316 activities with the plant.

SOCIOECONOMIC QUESTIONS

1. Permanent On-Site Workers

There are approximately 950 workers at WNP-2 and adjacent support facilities. The socioeconomic impact goes beyond on-site employment. Of the 1,600 Supply System employees, approximately 75-80% are chargeable to WNP-2.

2. Employment Changes

The Supply System's operating experience with WNP-2 only reaches back to 1984. The on-site staff has grown from about 750 to 950 in that time.

3. Outage Impacts

WNP-2 has completed four refueling outages and no ISI outage. Each refueling outage is planned for late spring. Our average outage is 66 days and requires approximately 600 additional workers (not tracked to major tasks). The average cost is $14 million. Occupational doses have totalled 397 man-Rem (highest outage) for the following tasks: control rod drive changeout (118 man-Rem); ISI (41 man-Rem); refueling (18 man-Rem), safety relief valve refurbish (10 man-Rem).

4. Taxes

Since Supply System publicly-owned facilities are not subject to property taxes, the taxable assessed value part of this question is not relevant. Sales taxes and generation taxes are the principal taxes. In 1980 when the project was still in construction, $9.33 million in sales taxes were paid in connection with goods and services for WNP-2. The totals in 1985 and 1990 were about $2.82 million and $3.15 million, respectively. About 10 percent of the sales tax is distributed to local taxing districts and 90 percent goes to the state for redistribution to local districts based on population. A generation tax is also levied based on the amount of power generation. The 1985 and 1990 totals were $1.84 million and $2.29 million, respectively. Ninety percent (90%) of this tax goes to the local taxing districts.