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ACCESSION NBR: 8202120073 DOC. DATE: 82/02/05 NOTARIZED: NO DOCKET #
 FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Power 05000397
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SUBJECT: Submits proposed outline of facility fuel rack surveillance program per 820122 telcon.

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A 3x3 grid of 9 small, dark, irregular shapes arranged in a square pattern. The shapes are dark and have a rough, textured appearance, possibly representing a microscopic view of a material or a specific type of biological cell. They are arranged in a regular grid, with three rows and three columns.

Washington Public Power Supply System

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February 5, 1982
G02-82-147
SS-L-02-KSN-82-007

Docket No. 50-397

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555



Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
FUEL RACK SURVEILLANCE PROGRAM

Below you will find the proposed outline of the WNP-2 Fuel Rack Surveillance Program which was discussed in a telephone conversation between your Mr. Benard Turovline and our Messrs. Roger Nelson and Mike Berry on January 22, 1982:

PROPOSED OUTLINE OF WNP-2 FUEL RACK SURVEILLANCE PROGRAM

Spent Fuel Rack Boron Carbide (B_4C) Plate In-Service Surveillance Program:

- I. Potential off-gassing of the neutron absorbing boron carbide plates in the spent fuel racks with possible resultant deformation of the fuel box can could require a change in the design from a dry plate installation to a wet plate installation.
- II. This design change to the WNP-2 spent fuel racks will be made by cutting-off the "leak-test" port plug that is located near the top of each rack assembly. Since all the fuel boxes within each rack assembly are inter-connected, only one venting location is required per module. This vent would allow the gasses to escape to the pool. Eventually, water would fill the small void area around the B_4C plate, thus wetting the neutron absorber material.
- III. To monitor the fuel racks for potential off-gassing problems as well as to insure that the B_4C plates would continue to be effective after exposure to a wet environment, an In-Service Surveillance Program will be established to monitor both for off-gassing and B_4C degradation.

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IV. The Surveillance Program will consist of the following steps:

- A. Monitoring of Sealed B_4C Samples exposed to discharged spent fuel for signs of swelling. Measuring of gas pressure via the connection port may be utilized. Sealed samples to be fabricated out of 304 S/S material similar to actual fuel boxes. If samples exhibit swelling check fuel boxes for deformation by use of gaging fixture.
- B. Monitoring of vented (to pool water) B_4C samples for signs of physical and/or chemical degradation. A visual examination of the B_4C sample coupons will be made to evaluate surface appearance, size, shape and color. Mechanical testing of B_4C samples will be done on a periodic basis to determine if physical degradation is occurring in the plate material. In addition, chemical testing will take place on a periodic basis to determine if leaching of the boron content is occurring. This test data will be compared to predicted values that have been obtained from previous studies by the B_4C plate fabricator. Also, studies by other utilities using similar B_4C material for high density spent fuel racks will be monitored for information.
- C. If swelling is detected at some future time in the fuel cans then a program to vent the racks will be utilized. The venting operation will consist of mechanically "cutting-off" the leak-test port plug which was seal welded in place at the manufacturer's shop. The monitoring of the vented B_4C samples will continue to occur until sufficient data indicates that a 40 year life for the plate material can be obtained.

Very truly yours,



G. D. Bouchey
Deputy Director, Safety and Security

KSN/jca

cc: R Auluck - NRC
WS Chin - BPA
R Feil - NRC Site

