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SUBJECT: Application for amend to License NPF-21,revising Tech Specs to allow use of ANF reload fuel in util Cycle 5.
See Rpt.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

March 3, 1989
G02-89-029

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station P1-137
Washington, D. C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2
OPERATING LICENSE NPF-21
REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATIONS
RELOAD LICENSE AMENDMENT (CYCLE 5)

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, the Supply System hereby requests an amendment to the WNP-2 Technical Specifications (Tech. Specs.). This amendment is being submitted to allow the use of Advanced Nuclear Fuels Corporation (ANF) reload fuel in Cycle 5 of WNP-2. Changes to the following Tech. Specs. are being requested:

Index	
B2.1.2	Thermal Power, High Pressure and High Flow
3/4.1.3.4	Four Control Rod Group Scram Insertion Times
3/4.2.1	Average Planar Linear Heat Generation Rate
3/4.2.3	Minimum Critical Power Ratio
3/4.2.4	Linear Heat Generation Rate
B3/4.2.1	Average Planar Linear Heat Generation Rate
5.3	Reactor Core

The attachments to this letter are a Reload Summary Report, marked up Tech. Specs. and the cycle specific documents generated by ANF. They are listed below. As a part of the marked up Tech. Specs. and in keeping with past Supply System practice, a brief summary justification of the Tech. Spec. change requests is attached to the marked up Tech. Specs. for clarification and information. Taken together, they provide the basis for the proposed no significant hazards determination.

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I. Technical Specification Changes

II. WNP-2 Cycle 5 Reload Summary Report (WPPSS-EANF-124) (Includes the Startup Physics Program).

III. WNP-2 Cycle 5 Reload Analysis (ANF-89-02)

IV. WNP-2 Cycle 5 Plant Transient Analysis (ANF-89-01)

The requested change to Tech. Spec. B2.1.2 is an editorial change only to reflect a change to the Tech. Specs. submitted and approved as Tech. Spec. Amendment No. 28.

A change to Tech. Spec. 3/4.1.3.4, Four Control Rod Group Scram Insertion Times, is also requested. The requested average scram insertion times are the values used in the WNP-2 transient and reload analyses for the reload fuel (Ref. ANF-89-01, ANF-89-02). During the change of fuel vendors from General Electric (GE) to Advanced Nuclear Fuels Corporation, previously named Exxon Nuclear, it was determined that ANF could support scram times analysis based on the average of four control rods arranged in a two-by-two array similar to the WNP-2 Tech. Spec. 3.1.3.4. An average core-wide insertion time would not be used in the ANF analysis, allowing the deletion of Tech. Spec. 3.1.3.3.

In order to provide the maximum amount of operating margin, the Supply System requested that ANF perform two sets of transient analyses: one based on a "fast" scram time which reflected actual plant data, and one based on a "slow" scram time based on the times specified in the plant Tech. Spec. Due either to a lack of clear understanding on ANF's part, or imprecise communication on the Supply System's part, the transient analysis has been performed using times for the "slow" scram taken from Tech. Spec. 3.1.3.3, the specification deleted, instead of the times from Specification 3.1.3.4, the specification which remained in the WNP-2 Plant Tech. Specs. This oversight was not immediately detected.

WNP-2 has never been required to use the MCPR limit generated by the "slow" scram analysis. All scram timing results acquired when MCPR limits depended upon scram timing have been faster than the "fast" scram times used in the transient analysis. Further, the scram timing surveillances performed compare the test results with the "fast" analysis times and times specified in both the current Tech. Spec. 3.1.3.4 and the deleted Tech. Spec. 3.1.3.3. Scram timing has never encroached upon the limits of either the current or the deleted specification. Therefore, there has never been an instance where the reactor has operated outside the approved operating envelope as established by the WNP-2 cycle specific reload transient analyses.

The Supply System has evaluated the requested amendment to the scram times in accordance with 10CFR50.59 and determined that there are no unreviewed safety questions. The Supply System has reviewed this change per 10CFR50.92 and determined that it does not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated because an analysis has been performed with the proposed four control rod group scram insertion times, and the analysis demonstrates no significant change in previously evaluated accidents.

2) Create the possibility of a new or different kind of accident from any previously evaluated because the operational limitations (scram times) applied to the nuclear plant reload analysis are shorter than those used on the initial core. These limitations are sufficient to ensure the plant is operated within previously accepted conditions.

3) Create a significant reduction in the margin of safety because the margin to safety with the proposed technical specification amendment implemented is either identical to or more conservative than that now in effect for the plant.

The other Tech. Spec. changes requested are addressed in detail in the Cycle 5 Reload Summary Report (WPPSS-EANF-124).

Included in the WNP-2 Cycle 5 reload are four 9x9 ANF lead fuel assemblies (LFAs). The Supply System intends to load the 9x9 LFAs in core locations which have been analyzed to have sufficient margin such that the LFAs are not expected to be the limiting assemblies in the core on either a nodal or a bundle power basis. This approach is intended to prevent the possibility of the 9x9 LFAs from ever being the limiting fuel bundles.

As a result of recent plant operation, the Supply System has directed Advanced Nuclear Fuels (ANF) to prepare an analysis of an alternate reload design for a one hundred thirty-six (136) fuel bundle core loading to supplement the one hundred forty-four (144) fuel bundle core loading described in this application. Based on the preliminary results from this analysis, the Supply System has added margin to the MCPR operating limits to accommodate this alternate reload design. Therefore, the values shown in the proposed change to Table 3.2.3-1 of the WNP-2 Technical Specifications attached are more conservative than those described in the reload application. If the Supply System elects to adopt the 136 bundle reload design, we will supply the NRC with a description of the analyses performed by ANF to support this design.

The Supply System has reviewed the use of ANF reload fuel in Cycle 5 of WNP-2 and concludes that it does not involve an unreviewed safety question. The Supply System has reviewed this change per 10CFR50.92 and determined that it does not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated because a multidiscipline analysis has been performed on the proposed Cycle 5 reload design to examine the probability or the consequences of an accident or safety analysis related equipment malfunction and the analysis demonstrates no signficant change in previously evaluated accidents.

   The mechanical, thermal-hydraulic, and neutronic characteristics of the ANF-4 reload bundles (including the 9x9 LFA's), have been analyzed and in all cases the evaluation of those changes shows that the design complies with the criteria established in the ANF design methodology as previously approved by the NRC (ref ANF-89-01 and ANF-89-02). The results of those analyses are consistent with previous results, and have not resulted in a significant reduction in a margin of safety (see 3 below).

2) Create the possibility of a new or different kind of accident from any accident previously evaluated because the reload fuel has been analyzed in detail and has been found to be sufficiently similar to the previous reload fuel whose analysis has been reported in the FSAR, to preclude the possibility that an accident or malfunction of a different type than that previously analyzed is credible. (Ref ANF-89-01, ANF-89-02). These analyses provide assurance that the proposed fuel loading design does not effect previous analyses bases.

3) Create a significant reduction in the margin of safety because the safety limit with the proposed Tech. Spec. amendment implemented is identical to that value now used in WNP-2, and the initial conditions as well as the methodology for calculating the delta CPR value have not changed from previous reload submittals.

As discussed above, the Supply System considers that this change does not involve a significant hazards consideration, nor is there a potential for significant change in the types or significant increase in the amount of any effluents that may be released offsite, nor does it involve a significant incease in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10CFR51.22(c)(9) and therefore, per 10CFR51.22(b), an environmental assessment of the change is not required.

This Tech. Spec. change has been reviewed and approved by the WNP-2 Plant Operations Committee (POC) and the Supply System Corporate Nuclear Safety Review Board (CNSRB). In accordance with 10CFR50.91(b) a copy of this amendment request has been sent to the State of Washington.

WNP-2 is scheduled to begin the spring outage on April 14, 1989. The plant is currently scheduled to resume operation on or about June 1, 1989.

Very truly yours,

GC Sorensen

G. C. Sorensen (MD 280)
Manager, Regulatory Programs

WCW:dm

cc: JB Martin - NRC RV
NS Reynolds - BCP&R
RB Samworth - NRC
DL Williams - BPA (399)
NRC Site Inspector (901A)
C Eschels - EFSEC

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Reload License Amendment (Cycle 5)

I, G. C. SORENSEN, being duly sworn, subscribe to and say that I am the Manager, Regulatory Programs, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information and belief the statements made in it are true.

DATE 3 MARCH, 1989

G. C. SORENSEN, Manager
Regulatory Programs

On this day personally appeared before me G. C. SORENSEN to me known to be the individual who executed the foregoing instrument and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 3rd day of March, 1989.

Bernice Kasko
Notary Public in and for the
State of Washington

Residing at Kennewick, Wa