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 RECIP. NAME RECIPIENT AFFILIATION
 ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Opines that existing neutron monitoring sys adequate to meet
 post-accident needs for measuring neutron flux per SSER4
 (NUREG-0971). License need not be amended yet to conform to
 Rev 2 to Reg Guide 1.97.

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G02-86-568

June 19, 1986

Docket No. 50-397

Director of Nuclear Reactor Regulation
Attn: E. G. Adensam, Project Director
BWR Project Directorate No. 3
Division of BWR Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

Subject: NUCLEAR PLANT NO. 2
LICENSE CONDITION 2.C.(16), ATTACHMENT 2,
ITEM 3(b), NEUTRON FLUX MONITORING,
SATISFACTION OF

- References:
- 1) Amendment No. 23 to Facility Operating License
NPF-21 - WPPSS Nuclear Project No. 2, dated
May 5, 1986
 - 2) Limerick Generating Station, Units 1 and 2,
Safety Evaluation Report, NUREG-0991,
Supplement No. 4, dated May 1985

The subject License Condition amended by Reference 1 requires that neutron flux monitoring be upgraded to meet the requirements of Regulatory Guide 1.97, Revision 2 "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident" prior to startup following the second refueling outage.

The Supply System has evaluated this license condition with respect to currently installed equipment and has concluded in light of recent developments (Reference 2) that the existing neutron monitoring system is adequate to meet post accident needs for measuring neutron flux.

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LICENSE CONDITION 2.C.(16), ATTACHMENT 2, ITEM 3(b), NEUTRON FLUX MONITORING, SATISFACTION OF

The only event for which long term monitoring of neutron flux is required is the anticipated transient without scram (ATWS) event, an event in which the control rods fail (completely or partially) to insert and the operator must actuate the standby liquid control system (SLCS). Any other event in which control rod insertion is achieved would not require long term monitoring. Control rod insertion would assure shutdown conditions are maintained and no disturbance of the control rods after insertion, in the short term or long term, is credible.

Given that the ATWS scenario is the accident for which long term neutron monitoring is needed, the neutron monitoring equipment must then survive the environmental conditions imposed by the ATWS event. These conditions were issued along with the NRC rule on ATWS, 10 CFR 50.62, in the Federal Register June 26, 1984 and state that the equipment must be qualified for "anticipated operational occurrences only, not for accidents". Accordingly, since the installed neutron flux monitoring equipment is qualified for the normal drywell environment (Category 2) no further upgrade is necessary. Further, sufficient time (post-ATWS) is available to insert multiple detectors (4 source range monitors, 8 intermediate-range monitors), thereby extending the lower range to below 10^{-6} percent full power. Six average power range monitors are fixed in-core and provide indication up to 120 percent full power. The redundancy of these 18 neutron flux channels provides a high confidence that flux monitoring will be accomplished, even with postulated multiple failures. On the basis of the above, the Supply System takes exception to the R.G. 1.97 position that flux monitoring equipment be included in Category 1.

The Supply System has performed the necessary analysis to demonstrate the adequacy of the existing flux monitoring equipment to meet the ATWS post accident requirements. In summary, it shows that the operator is provided sufficient time to recognize an approach to criticality due to boron concentration depletion, respond, and terminate the event. With this analysis and the final ATWS rulemaking, it is clear that the installed equipment need not be considered Category 1. With this exception (which has been found acceptable previously by the Staff), the guidelines of Regulatory Guide 1.97 for flux monitoring are met and the subject license condition is satisfied.

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LICENSE CONDITION 2.C(16), ATTACHMENT 2, ITEM 3(b), NEUTRON FLUX
MONITORING, SATISFACTION OF

Pursuant to the previous license condition commitment, the Supply System has solicited and is evaluating proposals for a wide range neutron monitoring system. Because WNP-2 has no spare detector locations in-core, an in-core-based wide range system would necessarily be required to interface with existing safety systems (Control Rod Block, Reactor Protection System). The Supply System has concluded that the proposed in-core systems do not adequately address these interfaces. The installation of such systems, currently under design development, may result in unnecessary challenges to the safety systems. A proposed system based upon an out-of-core detector has also been evaluated. This system detects the flux available outside of the reactor vessel, but suffers from insensitivity at 10-6% full power. The Supply System believes that implementation of such designs would not enhance overall reactor safety.

On the basis of the NRC having established a precedent with respect to this request by their approval of a similar request for Limerick Generating Station (Reference 2), the Supply System has decided to delay making the decision to commit the necessary funds to procure a flux monitoring system to meet the Category 1 requirements of Reg. Guide 1.97, Rev. 2 at this time. This, of course, will jeopardize our ability to meet the schedule presently contained in Licensing Condition 2.C.(16), which is prior to startup following the second refueling outage, if for some reason this request should not be approved by the NRC. To do otherwise would cause us to expend considerable public funding unnecessarily, which we must avoid.

Should you have any questions, please contact Mr. P. L. Powell, Manager, WNP-2 Licensing.

Very truly yours,



G. C. Sorensen, Manager
Regulatory Programs

PLP/bk

cc: JO Bradfute - NRC
JB Martin - NRC RV
E Revell - BPA
NS Reynolds - BLCP&R
NRC Site Inspector

