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SUBJECT: Application for amend to license NPF-21, revising TS 3/4.3.5
 & Tables 3.3.5-1 & 4.3.5-1 re RCIC actuation instrumentation
 & surveillance requirements.

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October 15, 1991
G02-91-188

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
REQUEST FOR AMENDMENT TO TS 3/4.3.5 AND
TABLES 3.3.5-1 & 4.3.5.1-1 RCIC ACTUATION INSTRUMENTATION
AND SURVEILLANCE REQUIREMENTS

- References:
- 1) GE Topical Report GENE-770-06-2, "Addendum to Bases for Changes to Surveillance Test Intervals and Allowed Out-of-Service Times for Selected Instrumentation Technical Specifications", dated February 1991
 - 2) GE Topical Report NEDC-30936P-A, "Technical Specification Improvement Methodology (With Documentation for BWR ECCS Actuation Instrumentation) Part 2", dated December 1988 (draft submittal July 1987)
 - 3) GE Topical Report NEDC-30936P-A, "BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 1", dated December 1988 (draft submittal November 1985)
 - 4) Letter, CE Rossi (NRR) to DN Grace (BWROG) "General Electric Company (GE) Topical Report NEDC-30936, 'BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation) Part 2'", dated December 9, 1988
 - 5) Letter, AC Thadani (NRR) to DN Grace (BWROG) "General Electric Company (GE) Topical Report NEDC-30936, 'BWR Owners Group Technical Specification Improvement Methodology (With Demonstration for BWR ECCS Actuation Instrumentation)', Part 1'", dated December 9, 1988
 - 6) Letter, G02-91-035, GC Sorensen (SS) to NRC, "Request for Amendment to TS 3/4.3.3 and Tables 3.3.3-1, 4.3.3.1-1, 3.3.5-1 & 4.3.5.1-1 ECCS & RCIC Actuation Instrumentation and Surveillance Requirements", dated February 21, 1991.

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REQUEST FOR AMEND. TO TS 3/4.3.5 AND TABLES 3.3.5-1
& 4.3.5.1-1 RCIC ACTUATION INSTRUMENTATION
AND SURVEILLANCE REQUIREMENTS

In accordance with the Code of Federal Regulations, Title 10 Parts 50.90 and 2.101, the Supply System hereby submits a request for amendment to the WNP-2 Technical Specifications. Specifically, the Supply System is requesting that the subject sections be modified, as shown in Attachment 1, to incorporate Reactor Core Isolation Cooling System (RCIC) surveillance test intervals (STIs) and allowed outage times (AOTs) recommended in References 1 and 2. The proposed changes optimize STIs for improved RCIC reliability and increase AOTs. As shown in Reference 1 the increase in AOTs has negligible impact on water injection failure frequency yet allows more time for repair and decreases the potential for unnecessary plant shutdown.

Further, the Reference 2 evaluation of the effect of other contributing factors from these changes indicates that these changes (combined with similar changes to Reactor Protection System, Emergency Core Cooling System, Isolation Actuation, and Control Rod Block Instrumentation STIs and AOTs) represent a net improvement in overall plant safety. Briefly the contributing factors include:

- Avoidance of inadvertent scrams.
- Decreased equipment degradation due to excessive testing.
- Decreased diversion of plant personnel.
- Avoidance of inadequate repair time allowances and the concomitant risk of working to overly restrictive deadlines.
- Avoidance of test caused failures.
- Avoidance of shutdown (and the inherent risk in plant shutdowns) due to restrictive limiting conditions for operation.

The Supply System as a member of the BWR Owners Group endorses the analysis submitted in References 1, 2 and 3. Reference 3 (NEDC-30936P-A Part 1) provided BWR reliability models and methodology with the demonstration case to perform plant specific evaluations of technical specification surveillance test intervals (STIs) and allowable out-of-service times (AOTs) for ECCS actuation instrumentation. The evaluation utilized reliability data, fault trees, accident sequences and computer analysis of system unavailabilities to determine changes in system unavailability due to changes in ECCS STI and AOT intervals. Since ECCS is used for core cooling when feedwater is lost, system unavailability challenges core cooling and might lead to core damage. Core damage frequency and plant safety are then bounded in the analysis by water injection function (WIF) unavailability. Hence, insignificant changes in WIF unavailability due to ECCS STI and AOT interval changes would have insignificant impact on core damage frequency and plant safety. As described in Reference 3, several baseline and scoping cases were used in concert with computer codes to determine the effect of STI and AOT changes on system unavailability. Where the system unavailability change was found to be less than 1 percent the Technical Specification change was acceptable. This methodology was utilized in Reference 3 for the single demonstration case and found acceptable by the Staff in Reference 5.

REQUEST FOR AMEND. TO TS 3/4.3.5 AND TABLES 3.3.5-1
& 4.3.5.1-1 RCIC ACTUATION INSTRUMENTATION
AND SURVEILLANCE REQUIREMENTS

Reference 2 provided ECCS and RCIC specific analyses that justified changing the RCIC STI from 1 to 3 months and the AOTs for repair and test from 1 to 24 hours and 2 to 6 hours respectively. Reference 4 documented Staff approval of the ECCS and RCIC analyses provided in Reference 2. In Reference 6 the Supply System requested the subject changes to the RCIC system along with changes to the ECCS instrumentation.

Subsequent to these submittals a concern was raised by the Staff that because the RCIC is not a safety system and therefore may not have the same design requirements and controls as the ECCS subsystems the STIs and AOTs justified in the referenced submittals may not be applicable to the RCIC. As a result Reference 1 was prepared by General Electric to answer this concern and reconfirm the applicability of the previous submittals to the RCIC system.

As stated in Reference 1 the RCIC system is recognized as a system important to safety and included in the Technical Specifications. The RCIC actuation instrumentation uses the same type of components and level of redundancy as ECCS systems and in some cases shares the same instrumentation. For these cases the STIs and AOTs established by References 2 and 3 apply directly to the RCIC.

In addition, Reference 1 analyzed the specific effect of changes to the RCIC actuation instrumentation STIs on water injection function unavailability. The analysis was performed using models and input data developed in References 2 and 3. The acceptance criterion developed in Reference 3 was used to evaluate changing or not changing the RCIC STIs. The acceptance criterion used was a 4% change in water injection function unavailability or an absolute value of 1.0×10^{-6} per year. As stated in Reference 1, the WIF failure frequency for the combination of ECCS and RCIC STI and AOT changes was within the acceptance criteria. Further the increase in WIF failure frequency due to changing the RCIC STI from 1 to 3 months was evaluated as less than a 1% change. Hence the change in RCIC actuation instrumentation STI is a small contributor to overall WIF failure frequency increase and the proposed changes to the WNP-2 RCIC Technical Specifications are therefore appropriate.

It should be noted that page 3/4 3-49 of the attached proposed changes has an editorial change to that submitted by the GE Topical Report (Reference 1). Specifically, Action 51 was clarified from "declare the RCIC system inoperable within 24 hours" to "restore the number of operable channels to that required by the minimum OPERABLE channels per Trip System requirement within 24 hours or declare the RCIC system inoperable". This change is strictly editorial and has no effect on the analysis or conclusions of the topical report. It clarifies the action statement such that withdrawal from a declaration of RCIC inoperability can be made upon equipment restoration. Strict compliance to the proposed topical wording would make a declaration of inoperability unavoidable despite full equipment recovery within 24 hours.

Although the following was submitted in Reference 6 and intended to be applicable to both ECCS and RCIC proposed changes it is repeated herein to reconfirm the applicability of the various analyses to the WNP-2 RCIC system.



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REQUEST FOR AMEND. TO TS 3/4.3.5 AND TABLES 3.3.5-1
& 4.3.5.1-1 RCIC ACTUATION INSTRUMENTATION
AND SURVEILLANCE REQUIREMENTS

Reference 4 noted that applicants for proposed Technical Specification changes must:

- "1. Confirm the applicability of the generic analyses of NEDC-309363P (Part 2) to the plant.
2. Confirm that any increase in instrument drift due to the extended STIs is properly accounted for in the setpoint calculation methodology. (For additional information on this issue, see letter from C.E. Rossi to R.F. Janecek, dated April 27, 1988.)"

With respect to condition 1 the Supply System confirms that the generic analysis provided in Reference 2 (NEDC-30936P-A, Part 2) is applicable to WNP-2.

Condition 2 was clarified in the noted letter (C.E. Rossi to R.F. Janecek, dated April 27, 1988) to applicants such that:

"To address the setpoint drift issue in the amendment proposals to extend STIs, licensees need only confirm that the setpoint drift which could be expected under the extended STIs has been studied and either (1) has been shown to remain within the existing allowance in the RPS and ESFAS instrument setpoint calculation or (2) that the allowance and setpoint have been adjusted to account for the additional expected drift. No additional information need be provided for staff review. However, records showing the actual setpoint calculation and supporting data should be retained onsite for possible future staff audit."

In response the Supply System has reviewed setpoint drift characteristics of the RCIC instrumentation affected by this change and confirmed that the setpoints will remain within existing allowances throughout the requested surveillance test interval extensions. The analysis has been documented and is retained on file for future Staff audit.

Appropriate detailed justification for the proposed changes is provided in References 1, 2 and 3. The proposed changes represent an optimization of testing targeted at reduction of RCIC equipment problems and failures in trade for acceptably insignificant changes in system availability. As such the changes represent an enhancement of plant operations with respect to RCIC and as summarized in Reference 2 "Summary of Results", in combination with other similar changes, will provide a net improvement in overall plant safety. The Supply System concurs with this statement and provides the following in support of a no significant hazards assessment.

REQUEST FOR AMEND. TO TS 3/4.3.5 AND TABLES 3.3.5-1
& 4.3.5.1-1 RCIC ACTUATION INSTRUMENTATION
AND SURVEILLANCE REQUIREMENTS

- 1) The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because the changes have been shown to have insignificant impact to overall RCIC failure rates and operability. As shown by generic analyses enveloping WNP-2, performed by General Electric for the Boiling Water Reactor Owner's Group (References 1, 2 and 3), the changes do not significantly degrade the reliability of the RCIC. Further as shown in the General Electric analysis specific to RCIC changes (Reference 1) the increase in water injection failure frequency due to the proposed changes to the RCIC system is less than 1% and, in absolute value, well within established acceptance criteria. Hence the probability and consequences of previously evaluated accidents are not significantly increased due to this change. To the contrary as stated in the General Electric analysis (Reference 2) the changes, in combination with similar changes to ECCS, RPS, Isolation Actuation and Control Rod Block instrumentation, provide a net improvement in overall plant safety. This is due to the optimization of system downtime, testing and failure probabilities.
- 2) The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because the RCIC function and reliability are not significantly degraded by these changes. No new modes of plant operation are introduced with these changes. Hence, no new or different kind of accident is credible.
- 3) The proposed changes do not involve a significant reduction in a margin of safety because, as shown in the generic analyses enveloping WNP-2 performed by General Electric for the Boiling Water Reactor Owner's Group (References 1, 2 and 3), the changes represent an overall improvement in plant safety. This, again, is due to the optimization of system downtime, testing and failure probabilities. As such the margin of safety is enhanced by the proposed changes.

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 increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(C)(9) and therefore, per 10 CFR 51.22(b), an environmental assessment of the change is not required.

Page 6

REQUEST FOR AMEND. TO TS 3/4.3.5 AND TABLES 3.3.5-1
& 4.3.5.1-1 RCIC ACTUATION INSTRUMENTATION
AND SURVEILLANCE REQUIREMENTS

This Technical Specification 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 10 CFR 50.91, the State of Washington has been provided a copy of this letter.

Very truly yours,



G. C. Sorensen, Manager
Regulatory Programs

PLP/bk
Attachments

cc: RG Waldo - EFSEC
JB Martin - NRC RV
NS Reynolds - Winston & Strawn
PL Eng - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A

STATE OF WASHINGTON)

COUNTY OF BENTON)

Subject: REQUEST FOR TECH SPEC
AMENDMENT 3/4.3.5

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: 14 OCTOBER, 1991

G. C. Sorensen
G. C. Sorensen, Manager
Regulatory Programs

On this date 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 14th day of October 1991.

Lilani Gallagher

Notary Public in and for the
STATE OF WASHINGTON

Residing at Kennewick WA

My Commission Expires 4-29-95



