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SUBJECT: Application for amend to license NPF-21 consisting of TS 3/4.3.7.5,accident monitoring instrumentation reactor bldg post loca grab sampler & effluent noble gas radiation monitor.

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March 10, 1993
G02-93-056

Docket No. 50-397

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

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION
3/4.3.7.5, ACCIDENT MONITORING INSTRUMENTATION,
REACTOR BUILDING POST LOCA GRAB SAMPLER
AND EFFLUENT NOBLE GAS RADIATION MONITOR**

Reference:
1) Letter, GO2-91-193, GD Bouchey (SS) to NRC dated October 18, 1991, "NRC Inspection Reports 85-20 and 90-29 Reactor Building Post-LOCA Grab Sampler (REA-SR-48)"

2) Letter, GO2-93-030, GC Sorensen (SS) to JB Martin (NRC), dated February 11, 1993 "NRC Inspection Report 50-397/92-41"

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. It is requested that the description of the subject instruments in Tables 3.3.7.5-1 and 4.3.7.5-1 be changed, as attached, to reflect the replacement of both the grab sampler and effluent noble gas monitor by a continuous on-line monitor. As described in Reference 1) the Supply System intends to install the continuous monitor during the forthcoming 1993 maintenance outage.

As stated in Reference 1) an in-line post accident monitoring system (with gamma spectroscopy capability) will be installed to monitor the reactor building elevated release duct. A medium range detector and a high range detector will be mounted adjacent to the reactor building elevated release ducting and as stated in Reference 2) a normal operating range detector will be installed in the reactor building elevated release duct. These detectors and supporting equipment will replace the present effluent noble gas monitor and grab sample system, items 30 and 31 of the subject table. This system will be capable of identifying and quantifying reactor building effluents, including noble gases, particulates, and halogens. As such the in-line monitor system

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replaces the two items in the Technical Specification tables in meeting the requirements of NUREG-0737 items II.F.1-1, "Noble Gas Effluent Monitor" and II.F.1-2, "Sampling and Analysis of Plant Effluents" as applied to these two systems. Item 30 should be deleted and item 31 should be changed to reflect the in-line monitoring capability instead of the present grab sample system.

NUREG 0737, II.F.1-2 required plants to have a capability to collect and analyze or measure representative samples of radioactive iodines and particulates in plant gaseous effluents following an accident in order to quantitatively determine the release of radioiodines and particulates for dose calculation and assessment. Initially, the Supply System met this requirement by relying on a sample filter and pump system to accumulate a representative sample for laboratory analysis. The system was automatically started on a high-high level alarm from a noble gas monitor and manually reset to stop so that the filter could be removed. Concerns as to the ability of the system to obtain a representative sample resulted in the use, on a short term basis, of a correction factor to approximate release values. Use of the correction factor is not a satisfactory long term solution to meeting the requirements of NUREG 0737 item II.F.1-2. Accordingly, Reference 1) documents the Supply System decision to improve plant capability by replacing the grab sample system with a continuous on-line monitor. Item 31 should be changed to reflect the new continuously on-line monitor. As stated in Reference 2) a grab sample capability will be retained for normal plant operation, however the Technical Specification and release quantifying requirements will be satisfied by the new system.

At WNP-2 item 30 in the Technical Specifications tables is satisfied by a noble gas monitor monitoring the reactor building elevated release duct also. NUREG 0737 item II.F.1-1 specifies the requirements for the design of this monitor. Range, power supply, calibration, display, qualification and design considerations are listed. The system replacing the grab sample system, described below, also meets these requirements for a noble gas monitor. Reference 2) also provides additional information on the design of the monitor. The requirements in both Technical Specification tables (surveillances, number of channels [required and minimum], applicable operational conditions and action statements) for the Reactor Building Post LOCA Monitor (item 31) and the Effluent Noble Gas Radiation Monitor (item 30) are the same. Because the new system also meets all the design requirements of item 30, item 30 can therefore be deleted with no effect on compliance to the present Technical Specifications. All the surveillances, number of channels (required and minimum), applicable operational conditions and action statements remain applicable to the new monitor and will be satisfied as required by compliance to item 31. With the new installation item 30 becomes redundant to item 31.

The in-line system will run continuously and will not require an initiation signal from a high-high noble gas alarm as does the present sampler. It has two detectors providing a range of 10^{-6} to 10^{5} μCi/cc with one decade of overlap. A third detector is provided to monitor low level normal operational activity. Lead enclosures provide shielding from post accident background radiation and collimator design and detector location assure representative sampling. Two separate computers control detector, signal processing, and spectral analysis functions. A third computer, in the control room, is fed from the controlling computers. The control room computer provides system status monitoring and data output. System trouble alarms are provided to the operator for (VECII) hardware and software problems. Self check signals are generated internally. The self check frequency will be determined during preoperational testing. Gross gamma level is provided to the Technical Data Acquisition System (TDAS) and a trending recorder. Display information is updated every six seconds with hardcopy every 24 seconds. Effluent isotopic information is provided as a function of release activity. Counting times decrease as release activity increases and increase with decreasing activity. Field tests will determine the optimum interval relationships between activity and counting periods. The control room computer will also receive an elevated release air flow signal so isotope release information can be available for offsite dose calculations. The system is designed to operate in the post accident environment anticipated for the location of the equipment and is powered by reliable battery-backed power. It has been designed to meet the appropriate sections of ANSI N42.18-1980 (formerly ANSI N13.10) "Specification and Performance of On-Site Instrumentation for Continuously Monitoring Radioactivity In Effluents". Additionally, guidelines from ANSI N42.14-1991 "Calibration and Use of Germanium Spectrometers for the Measurement of Gamma-Ray Emission Rates of Radionuclides" have been used to monitor system performance as part of the surveillance and calibration processes developed for the system. In-situ calibration will use NIST traceable standards and transfer calibrations using NIST referenced equipment will be performed on samples drawn from the elevated release. This system meets or exceeds the requirements of NUREG 0737 item II.F.1-2 and is superior to the presently installed grab sample system.

It is intended that with this change the frequency of channel check and channel calibration surveillances for the in-line system will remain the same as presently required for the grab sampling and noble gas monitoring systems. In addition to the self check function described above, a channel check will be performed on a monthly frequency as prescribed for the present grab sample and noble gas monitoring systems. The channel check will consist of exposing the detector to a known source and verifying an appropriate system response. A significant deviation would require a channel calibration. The channel calibration will be conducted on an

"R" (refueling) schedule which is presently yearly. The annual "R" schedule is considered adequate because the monthly channel check with a known source and expected response will provide indication of the need to perform a channel calibration. These system surveillances and the self checking function will provide confidence that the system is operable.

The Supply System has evaluated this change in reactor building effluent monitoring grab sample and noble gas monitoring capability and determined that it does not represent a significant hazards consideration because it does not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The intent of the sampling or monitoring function is to evaluate the consequences of an accident, as such the monitor is not an accident initiator and cannot contribute to the possibility of a previously evaluated accident. With respect to increasing the consequences of an accident, as discussed above the in-line monitor will provide a more immediate indication of the release of effluents through the reactor building elevated release. Further it will provide a more timely indication of a release impact over a period of time. More timely input of such data will allow a more deliberate plant reaction. Mitigation actions can then be based on a better knowledge of the release. A better knowledge base from which to direct accident mitigation efforts will ultimately lead to a decrease in the consequences of an accident.

   The change deleting entries in the tables (item 30) for a Noble Gas Radiation Monitor does not involve a significant increase in the probability or consequences of an accident previously evaluated because no change in plant capability is represented by this change. Noble gas effluent monitoring of the reactor building elevated release will continue with equipment of equal capability as that being replaced. As stated above, the monitors are not capable of initiating an accident, therefore there is no increase in the probability of a previously evaluated accident. Because the equipment is designed to survive the expected post LOCA environment of the area it is located in, and the equipment is tested on a schedule that will assure operability, the monitor will perform adequately under post accident conditions. Therefore, the change does not represent a significant increase in the consequences of a previously evaluated accident.

As stated above the proposed surveillances and frequencies will assure that the system remains operable. Further, the system internal status monitoring self check capabilities and trouble alarms will assure that extended failures will not occur and compensatory actions and repairs will be promptly initiated. Additionally, the system is qualified to operate in the post accident environment anticipated for the location of the equipment. Battery backed power will also provide high system reliability. For these reasons this change does not represent a significant increase in system unavailability that might impact the capability to adequately monitor the consequences of a previously evaluated accident.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated. The monitor performs a passive function that follows and monitors plant events. There is no credible situation in which the monitor might become an accident initiator. The change meets the appropriate design requirements as stated in NUREG 0737 items II.F.1-1 and II.F.1-2. For these reasons the replacement of the grab sample system and the noble gas monitor with the continuously on-line system will not create the possibility of a new or different kind of accident from any previously evaluated.

3) Involve a significant reduction in a margin of safety. As discussed above, the change meets or exceeds the requirements of NUREG 0737 items II.F.1-1 and II.F.1-2 and is superior to the presently installed systems. The surveillances and frequencies proposed will assure that the equipment remains operable. The in-line system will provide more timely information from which to base plant actions on than that presently provided by the grab sample system. Therefore, the margin of safety created by the existence and use of the grab sample system is enhanced by the proposed replacement with the in-line system. The replacement of the noble gas monitor with the new monitor, because there is no significant change in design capabilities, maintains the existing margin of safety recognized by the present noble gas monitor. Therefore, the in-line system does not impact a margin of safety but preserves and enhances the originally intended margin of safety for the grab sample and does not affect the margin of safety credited to the present noble gas monitor. No margin of safety is adversely impacted by this change.

In order to be able to declare the system operable it will be necessary to perform a calibration of the instrumentation in an operating configuration with respect to orientation in the exhaust duct and in the exhaust stream under operating conditions with actual plant emissions. The calibration will be accomplished by obtaining a grab sample of the exhaust, analyzing it with laboratory instrumentation traceable to NIST standards, and comparing the results to the system output and adjusting the system as necessary to reflect the laboratory results. In this manner the system can then be declared operable and assurance established that the instrumentation will respond reliably to plant exhaust emissions under all conditions. To be able to do this the plant

must be in operating condition 1. Technical Specification 3.0.4 precludes maneuvering the plant above operating condition 4 without declaring this system operable. Therefore a one time exemption to 3.0.4 is requested with this change to allow the plant to proceed to operating Condition 1 without having the system operable so that the calibration can be performed under operating conditions. This one time exemption is the asterisked statement at the bottom of the attached tables. The Calibration could be performed external to the exhaust ducting however such an attempt would require duplicating operating conditions with a mock up which has a potential for not being exactly representative of operating conditions and could thereby result in a misleading calibration and an instrument that is not capable of performing to expected standards. With this one time exemption the action required when this instrumentation is inoperable, Action statement 81 (a preplanned alternate method of monitoring), would be initiated. Hence during startup after the annual refueling outage the monitor would be inoperable for the length of time necessary to reach normal exhaust effluent levels and perform the calibration and declare the instrumentation operable. During this time the presently allowed, Action statement 81, preplanned alternate method of monitoring would be in service.

The Supply System has evaluated this one time exemption to Technical Specification 3.0.4 to allow in place calibration of the system and determined that it does not represent a significant hazards consideration because it does not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated. Again, the intent of the sampling or monitoring function is to evaluate the consequences of an accident, as such the monitor is not an accident initiator and cannot contribute to the possibility of a previously evaluated accident. With respect to increasing the consequences of an accident, the presently allowed (Action Statement 81) preplanned alternate method of monitoring will be initiated to cover the calibration period. Hence for a relatively short duration the preplanned method will be performing the monitoring function. Should it be necessary to use this method the data obtained will not be as current or accurate as that provided by the new system, however this decrease in capability is offset by the relatively short duration of use before it is replaced by the new system. Further it is necessary to operate under Action Statement 81 so that a transition to a calibrated system, far superior than the present system, can be made. This temporary reliance on the preplanned method is justified in that it will allow the new system to be calibrated. The duration of time on the preplanned alternate method, with limited capability, is offset by continued operation of the new system with enhanced capability. Allowing plant startup with this instrumentation inoperable while on the preplanned alternate method does not increase the consequences of an accident beyond that which is allowed with this instrumentation inoperable at full power. Changing plant

conditions within the bounding conditions of previously analyzed acccidents will not increase the accident's consequences beyond those previously analyzed. For these reasons the temporary exemption to Technical Specification 3.0.4 does not represent a significant increase in the probability or consequences of a previously evaluated accident.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated. The monitor and the preplanned alternate method perform a passive function that follows and monitors plant events. There is no credible situation in which either could become an accident initiator. No new modes of operation or plant modifications are necessary to implement the preplanned alternate method or to transition to the new system. A plant startup with this instrumentation inoperable while utilizing the preplanned alternate method does not create the possibility of an accident different than that which has previously been evaluated with this instrumentation inoperable during higher operational conditions. Changing plant conditions within the bounding conditions of previously analyzed accidents will not create the possibility of a new or different kind of accident. For these reasons a one time exemption from Technical Specification 3.0.4 during calibration of the new system does not create the possibility of a new or different kind of accident from any previously evaluated.

3) Involve a significant reduction in a margin of safety. As discussed above, the preplanned alternate method allowed by Action Statement 81 will be used during the period of time needed to calibrate the new system. This allowance is authorized by the present Technical Specifications. The potential decrease in system capability is recognized by the Technical Specifications and allowed during operation. Commencing a plant startup, using the preplanned alternate method of monitoring during the calibration period, does not significantly decrease the margin of safety accepted during continuous operation under these conditions. Further, the decrease in capability during the relatively short calibration period is offset by the enhanced continuous operation that will be realized when the new system is put into operation. For these reasons the margin of safety created by the use of the grab sample system is not significantly degraded by the one time temporary exemption to Technical Specification 3.0.4 with the preplanned alternate method of monitoring initiated.

REQUEST FOR AMEND TO TS 3/4.3.7.5, ACCIDENT MONITORING INSTRUMENTATION, RX BLDG POST LOCA GRAB SAMPLER AND EFFLUENT NOBLE GAS RADIATION MONITOR

As discussed above, the Supply System concludes that this change does not involve a significant hazards consideration, nor is there a potential for a significant change in the types or significant increase in the amount of any effluents that may be released offsite, nor does the change 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 this change is not required.

This Technical Specification change request has been reviewed and approved by the WNP-2 Plant Operations Committee and the Supply System Corporate Nuclear Safety Review Board. In accordance with 10 CFR 50.91, the State of Washington has been provided a copy of this letter.

The Supply System intends to install this modification during the forthcoming refueling outage starting April 30, 1993. The outage duration is scheduled for 45 days. Accordingly, approval of this request is needed no later than June 14, 1993 to support returning the plant to power at the end of the outage.

Sincerely,

G. C. Sorensen, Manager
Regulatory Programs (Mail Drop PE20)

PLP/bk
Attachments

cc: W Bishop - EFSEC
NS Reynolds - Winston & Strawn
DL Williams - BPA/399
RA Scarano - NRC RV
JB Martin - NRC RV
JW Clifford - NRC
NRC Site Inspector - 901A

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Request for Amend to TS
Post Loca Grab Sampler and
Noble Gas Radiation Monitor

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 the 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 10 MARCH, 1993

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 10 th day of March 1993.

Notary Public in and for the
STATE OF WASHINGTON

Residing at Kennewick, Washington

My Commission Expires April 28, 1994