



Point Beach Nuclear Plant
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NPL 97-0804

10CFR50.90

December 15, 1997

Document Control Desk
U.S. NUCLEAR REGULATORY COMMISSION
Mail Station P1-137
Washington, DC 20555

Ladies/Gentlemen:

DOCKETS 50-266 AND 50-301
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
TECHNICAL SPECIFICATION CHANGE REQUESTS RELATING
TO RADIATION PROTECTION, DATED AUGUST 15, 1997
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

By letter dated August 15, 1997, Wisconsin Electric Power Company received a request for additional information (RAI) pertaining to Technical Specifications change requests (TSCRs) 172, 174, 182, and 195. These TSCRs involve proposed changes to the Point Beach Nuclear Plant Technical Specifications for radiation monitoring system, radiological effluent Technical Specifications, Health Physics manager qualification, and radiation protection program.

Our response to the questions contained in the request for additional information are contained in Attachment 1 to this letter. Additionally, related revisions to TSCRs 172, 174, 182, and 195 and a copy of the RAI are provided in Attachments 2, 3, 4, and 5 to this letter.

If you have any questions or require additional information, please contact us.

Sincerely,

Douglas F. Johnson
Manager,
Regulatory Services and Licensing

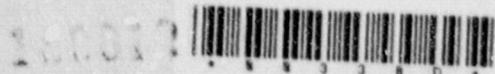
Attachments

cc: NRC Regional Administrator
NRC Resident Inspector
PSCW

Subscribed and sworn before me on
this 15th day of November, 1997.

Notary Public, State of Wisconsin
My commission expires September 16, 2001

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ATTACHMENT 1 RESPONSES TO QUESTIONS

Technical Specifications Change Request 172

Question:

1. It is the NRC's understanding that PBNP has three categories of monitors in the radiation monitoring system: Area monitors, effluent monitors and process monitors. Please verify the lists of radiation monitors in Attachment B, Tables 1, 2, and 3 include all radiation monitors in the radiation monitoring system.

Response:

In general, as described in Section 11.2.3 of the PBNP FSAR, radiation monitors are typically in one of two main categories: Area and process (process monitors include effluent monitors). Area monitors provide direct indication of area radiation dose rates in various areas of the plant. Process monitors track radiation levels involved with some process such as the flow of effluent in a line or the amount of radioactivity in a tank. A third category of monitor listed in Chapter 11 of the PBNP FSAR is the SPING (System-level Particulate, Iodine, and Noble Gas). These are process monitors for the containment purge exhaust vent, auxiliary building exhaust vent, and the drumming area exhaust vent.

Tables 1, 2, and 3 of Attachment B to the RAI have been reviewed. The following recommended corrections have been identified for Attachment B.

In Table 2, RMS Process Monitors, page B-4 of the RAI lists the RMS monitor RE-238 but provides the description for the RE-241 monitor. Change the current RE-238 listing into two different monitors as indicated below:

RE-238, TSC noble gas monitor, monitors noble gas activity of the TSC air supply
RE-241, SBCC iodine monitor, monitors iodine in SBCC air supply

Several RMS monitors listed in Table 3 of the RAI have been deleted from the system (see PBNP FSAR Table 11.2-8, SPINGs). None of the deleted monitors had a required control function or were relied on for release quantification. The deleted monitors are the following:

1(2)RE-302, the containment purge exhaust alpha particulate monitors,
1(2)RE-308, the containment purge exhaust low range gas background monitors,
RE-312, auxiliary building exhaust alpha particulate monitor,
RE-318, auxiliary building exhaust low range gas monitor background,
RE-322, drumming area exhaust alpha particulate monitor,
RE-328, drumming area exhaust low range gas background monitor.

Question:

2. In each category, some of the monitors, listed in Attachment B, Table 4, have control functions that may meet the requirements of 10 CFR 50.36. Please address those monitors listed in Attachment B, Tables 1, 2, 3, and 4 which have control functions and provide additional information why these monitors do/do not meet any of the criteria of 10 CFR 50.36.

Response:

The list of monitors in the RAI Table 4 is consistent with the PBNP FSAR Section 11.2 descriptions of the radiation monitors that have control functions, except the FSAR does not list the control functions associated with SPING 21 and 22, the Unit 1 and Unit 2 containment purge exhaust. Further, the RAI Table 4 lists 1(2)RE-305 as the only monitor in the purge exhaust system as the initiator of containment ventilation isolation (CVI). Actually, 1(2)RE-301 Beta Particulate, 1(2)RE-303 Iodine, 1(2)RE-305 Low-range Gas, 1(2)RE-306 Area Monitor, 1(2)RE-307 Mid-range Gas, and 1(2)RE-309 High-range Gas, which are collectively referred to as SPING-21 and SPING-22 also initiate CVI for the respective unit. Only 1(2)RE-305 is required to initiate the isolation function.

RE-101 Control Room Area Monitor and RE-235 Control Room Noble Gas - Shift control room ventilation to Mode 4, outside air filtration (not Mode 3 as stated in RAI Table 4). These monitors are considered part of the control room emergency filtration system for the purposes of meeting system operability requirements. The applicable LCO is PBNP Technical Specification 15.3.12 and the applicable surveillance requirement is contained in PBNP Technical Specification 15.4.11. Based on their accident mitigation function for control room ventilation, these monitors could be considered as required to be covered in the Technical Specifications under the provisions of 10 CFR 50.36, Criterion 3. During the review of these monitors for this RAI, it was discovered that the alarm response book entries for these monitors continue to reference an outdated analysis that concluded that these monitors are not necessary for control room emergency filtration operation. The applicable radiation monitoring system alarm response book entries will be revised to correct this discrepancy.

1(2)RE-212 Containment Noble Gas and 1(2)RE-305 Containment Purge Exhaust Low Range Gas - Initiates CVI. These monitors are considered part of the containment purge and vent system isolation for the purposes of meeting system operability requirements. The applicable LCO and surveillance requirements are contained in PBNP Technical Specification 15.3.8, "Refueling." CVI in response to high radiation input signals is not a required function for any PBNP accident analyses. Therefore, the control function of these monitors does not meet any of the four criteria contained in 10 CFR 50.36. The applicable PBNP design basis accident analysis is described in PBNP FSAR Section 14.2.1 "Fuel Handling Accidents." The FSAR states on pages 14.2.1-6 and 7, "The noble gas activity could be released either in the containment or in the auxiliary (fuel storage) building. The whole body dose to personnel

in the containment, were they to remain in this accident area, would be 4.8 rem, or to personnel in the fuel storage building, were they to remain in this accident area, would be 4.0 rem. Each dose is calculated on the basis of the respective area ventilation rates, 25,000 and 21,000 cfm, and 0.5 rem/MPC (Xe-133). Both area ventilation systems are in operation under administrative control during refueling. However, radioactivity monitors would immediately indicate and alarm the increased activity levels, directing evacuation of the respective area. Activity in the containment would automatically close the purge ducts." The off-site dose analyses described in FSAR Section 14.2.1 do not require the operation of purge exhaust isolation or CVI because the fuel handling accident is analyzed as an unobstructed, ground-level release.

RE-214 Auxiliary Building Vent Exhaust Gas Monitor - Shifts Auxiliary Building Ventilation to the Carbon Filters Shuts Gas Release Valve RCV-014, if Open. This control function is provided to assist in prevention of effluent release in excess of 10 CFR 20 limits. The applicable accident analysis contained in FSAR Section 14.2.3 "Accidental Release-Waste Gas" does not require this control function to operate because the dose analysis is based on release without isolation. Additionally, automatic operation of this system is currently not required for mitigation of any accident for PBNP. Therefore, this function does not meet any of the four criteria contained in 10 CFR 50.36.

RE-217 Component Cooling Water Liquid Monitor - Shuts Component Cooling Surge Tank Vent Valve RCV-017. The CCW surge tank vent valve is normally maintained in a closed position. If RCV-017 is open, its position is controlled administratively. Therefore, this control function is no longer required (Reference Licensee Event Report 92-009-01, "Component Cooling Water System Surge Tank Vent Valves Outside Design Basis," dated May 17, 1993). Therefore, this function does not meet any of the four criteria contained in 10 CFR 50.36.

RE-218 Waste Disposal System Liquid Monitor - Shuts Waste Liquid Overboard Valve RCV-018. This control function is provided to prevent accidental release of waste liquid as described in FSAR Section 14.2.2 "Accidental Release-Recycle or Waste Liquid." Therefore, this function meets Criterion 3 of 10 CFR 50.36 and will be added to the Technical Specifications.

1(2)RE-219 Steam Generator Blowdown Sample Line Monitor - Shuts Blowdown Valves (MS-5958 and MS-5959), Blowdown Tank Outlet Valve (MS-2040), and Blowdown Sample Isolations (MS-2083 and 2084). This control function is provided to assist in prevention of effluent release in excess of 10 CFR 20 limits. This function is not utilized for accident mitigation. This function does not meet any of the four criteria contained in 10 CFR 50.36.

1(2)RE-222 Steam Generator Blowdown Sample Line Monitor - Shuts Blowdown Valves (MS-5958 and MS-5959) and Blowdown Tank Outlet Valve (MS-2040). This control function is provided to assist in prevention of effluent release in excess of 10 CFR 20 limits. This function is not utilized for accident mitigation. This function does not meet any of the four criteria contained in 10 CFR 50.36.

RE-223 Waste Distillate Tank Overboard Monitor - Shuts Waste Distillate Overboard Valve FCV-LW-15. This control function is provided to prevent accidental release of waste liquid as described in FSAR Section 14.2.2 "Accidental Release-Recycle or Waste Liquid." Therefore, this function meets Criterion 3 of 10 CFR 50.36 and will be added to the Technical Specifications.

Question:

3. Please provide information on other radiation monitors, identified by item 1, that meet the criteria of 10 CFR 50.36. Provide justification on why these monitors, if any, are not included in the technical specifications (TS).

Response:

NUREG-1431, "Standard Technical Specifications - Westinghouse Plants," contains standard guidance for meeting the criteria of 10 CFR 50.36. Some NUREG-1431 sections that may be pertinent are listed in Attachment A of the RAI. The NUREG-1431 sections listed in Attachment A of the RAI for possible radiation monitoring requirements for the PBNP monitors, identified by item 1, are reviewed as follows:

TS 3.3.3 Post-accident Monitoring (PAM) instrumentation.

Containment high range radiation monitors and the main steam line monitors are the only applicable instruments. Containment high range radiation are PBNP monitor channels RE-126, RE-127, and RE-128. The main steam line radiation are monitor channels 1(2)RE-231 and 1(2)RE-232. These channels are already included in PBNP TS Table 15.3.5-5. The surveillance requirement for the containment high radiation monitors is contained in TS Table 15.4.1-1, item 25. TSCR 172 proposes to specifically include the main steam line monitors in TS Table 15.4.1-1, item 36.

TS 3.3.5 Containment Ventilation Isolation Instrumentation

As stated in the answer to question 2, CVI in response to high radiation input signals is not a required function for any PBNP accident analyses, in particular the fuel handling accident. The LCO and Surveillance requirement for this function are contained in PBNP TS 15.3.8. Based on this function not being required to meet any 10 CFR 50.36 criteria, removal of these requirements from the PBNP Technical Specifications may be warranted. No Technical Specifications changes are being proposed for this function, at this time.

TS 3.3.6 Control Room Emergency Air Treatment System Actuation Instrumentation

As stated in the answer to question 2, these monitors are considered part of the control room emergency filtration system for the purposes of meeting system operability requirements. The applicable LCO is PBNP Technical Specification 15.3.12 and the applicable surveillance requirement is contained in PBNP Technical Specification 15.4.11. These monitors could be

considered as required to be covered in the Technical Specifications under the provisions of 10 CFR 50.36, Criterion 3. Proposed Technical Specifications changes are provided in Attachment 2.

TS 3.4.15 RCS Leakage Detection Instrumentation

Technical Specification 15.3.1.D.7 establishes the LCO requirements for RCS leakage detection in the current Technical Specifications for PBNP.

TS 3.7.7 Component Cooling Water System

As stated in the answer to question 2, the CCW surge tank vent valve is normally maintained in a closed position. Therefore, this control function is no longer required (Reference Licensee Event Report 92-009-01, "Component Cooling Water System Surge Tank Vent Valves Outside Design Basis," dated May 17, 1993). Therefore, this function does not meet any of the four criteria contained in 10 CFR 50.36.

TS 3.7.8 Service Water System

As stated in the answer to question 2, RE-218 and RE-223 are the monitors that provide control input to shut valves that prevent accidental release of waste liquid as described in PBNP FSAR Section 14.2.2 "Accidental Release-Recycle of Waste Liquid." Therefore, these monitors should be included in the Technical Specifications. These are not service water system components. The radiation monitors, RE-218 and RE-223, are designated in the radiation monitoring system (RMS). The associated valves, Waste Liquid Overboard Valve RCV-018 and Waste Distillate Overboard Valve FCV-LW-15, are designated waste liquid (WL) and blowdown evaporator (BE) systems, respectively.

TS 3.7.9 Control Room Emergency Air Treatment System (Note: NUREG-1431 reference should be TS 3.7.10 control room emergency filtration system)

As stated in the answer to question 2, RE-101 Control Room Area Monitor and RE-235 Control Room Noble Gas - Shift control room ventilation to Mode 4, outside air filtration (not Mode 3 as stated in RAI Table 4). These monitors are considered part of the control room emergency filtration system for the purposes of meeting system operability requirements. The applicable LCO is PBNP Technical Specification 15.3.12 and the applicable surveillance requirement is contained in PBNP Technical Specification 15.4.11. These monitors could be considered as required to be covered in the Technical Specifications under the provisions of 10 CFR 50.36, Criterion 3. Proposed Technical Specifications changes are provided in Attachment 2.

TS 3.7.10 Auxiliary Building Ventilation System (Note: NUREG-1431 reference should be TS 3.7.12 Emergency Core Cooling System Pump Room Exhaust Cleanup System)

As stated in the answer to question 2, RE-214 Auxiliary Building Vent Exhaust Gas Monitor - Shifts Auxiliary Building Ventilation to the Carbon Filters Shuts Gas Release Valve RCV-014, if Open. This control function is provided to assist in prevention of effluent release in excess of 10 CFR 20 limits. The applicable accident analysis contained in FSAR Section 14.2.3 "Accidental Release-Waste Gas" does not require this control function to operate. Additionally, automatic operation of this system is currently not required for mitigation of any accident for PBNP. Therefore, this function does not meet any of the four criteria contained in 10 CFR 50.36.

Question:

4. Submit the appropriate TS changes, in accordance with 50.36, for those radiation monitors that should/must remain in IS. Include limiting conditions for operation, applicability, action statements with conditions, required action and completion time specified, surveillance requirements, surveillance frequencies, required number of monitors, monitor setpoints, and bases.

Response:

Based on the responses to the preceding three questions, the following modifications to Technical Specifications change request 172 are appropriate:

- In Table 15.4.1-1 under item 36, include RE-218 and RE-223. A new note for check of these channels will require a source check to be performed prior to initiation of a release using the associated discharge flowpath. Failure of the source check surveillance effectively prevents use of the discharge flowpath. A shiftly channel check will continue for the duration of the release. The setpoints for these channels are controlled by the Radiological Effluent Control Program, which is a licensee controlled program as described in TSCR 174. A refueling calibration will be maintained and quaterly channel functional testing will be performed. These surveillance requirements are applicable during all plant conditions.

As stated in the answer to question 2, RE-101 Control Room Area Monitor and RE-235 Control Room Noble Gas - Shift control room ventilation to Mode 4, outside air filtration (not Mode 3 as stated in RAI Table 4). These monitors are considered part of the control room emergency filtration system for the purposes of meeting system operability requirements. The applicable LCO is PBNP Technical Specification 15.3.12 and the applicable surveillance requirement is contained in PBNP Technical Specification 15.4.11. These monitors could be considered as required to be covered in the Technical Specifications under the provisions of 10 CFR 50.36, Criterion 3. A license condition is currently in effect to require re-analysis of the control room to show that the dose limits of GDC 19 can be met under all design basis accident conditions and submittal of a license amendment request by February 27, 1998. Additional Technical

Specifications requirements (e.g. monitor setpoints) for the control room emergency filtration system as necessary to show compliance with that license condition will be submitted at that time.

The modifications to TSCR 172 are provided as Attachment 2.

Technical Specifications Change Request 174

Question:

5. New guidance (Attachment C) was provided to the Nuclear Energy Institute (NEI) on April 9, 1997, on TS for the radioactive effluent controls program. This new guidance includes 10 CFR Part 20 changes. Please review the new guidance and revise your submittal as appropriate.

Response:

The modifications to TSCR 174 are provided as Attachment 3.

Question:

6. Revise submittal to remove only those radiological effluent monitors that do not meet the requirements of 10 CFR 50.36.

Response:

As stated in the answer to question 4, appropriate Technical Specification requirements for RE-218 and RE-223 are being proposed in Attachment 2. The application of the 10 CFR 50.36 criteria concluded that these monitors are necessary for accident response. The proposed Technical Specification requirements are for the control function of these instruments in the prevention of waste liquid release accidents, as described in the Point Beach FSAR section 14.2.2. No effluent monitors were identified by the application of the 10 CFR 50.36 criteria for inclusion in the Technical Specifications for purposes of their effluent monitoring function. It is still appropriate to relocate all effluent monitors to the radiological effluent control program under the guidance contained in GL 89-01 and GL 95-10.

Technical Specifications Change Request 182

Question:

7. Please provide sufficient information to describe the Health Physicist position description. The description should document that the position is a professional, supervisor position that affords adequate authority and opportunity to represent program interests on a plant-wide basis. Additionally, describe the involvement of the designated Health Physicist in the day-to-day operation and oversight of the plant radiation protection program.

Response:

The additional information is contained in Attachment 4.

Technical Specifications Change Request 195

Question:

8. New guidance (Attachment D) was provided to NEI on April 9, 1997, on TS administrative controls for a high radiation area. This new guidance includes 10 CFR 20 changes. Please review the new guidance and revise your submittal as appropriate.

Response:

The modifications to TSCR 195 are provided as Attachment 5.

Question:

9. If you choose not to revise your submittal per the new guidance, please describe how your program complies with the new Part 20 requirements for high radiation area with dose rates greater than 1.0 rem/hour at 30 centimeters from the radiation source or from any surface penetrated by the radiation, but less than 500 rads/hour at 1 meter from the radiation source or from any surface penetrated by the radiation.

Response:

This question does not apply based on incorporation of new guidance, see Attachment 5.

ATTACHMENT 2 SUPPLEMENT TO TSCR 172

Technical Specifications change request (TSCR) 172, as described in letters from Wisconsin Electric to the Nuclear Regulatory Commission (NRC) dated May 2, 1995, October 12, 1995, and March 26, 1996, proposes to change Technical Specifications surveillance requirements for the radiation monitoring system from monthly to quarterly and specify only the necessary monitors. In a letter dated August 15, 1997, the NRC provided a request for additional information that included four questions pertaining to this Technical Specifications change request.

The following modifications to TSCR 172 were identified during the preparation of the response to the NRC's request for additional information:

1. Add RE-218 Waste Disposal System Liquid Monitor and RE-223 Waste Distillate Overboard Monitor to item 36 in TS Table 15.4.1-1. These monitors will use note (7) for the "Check" requirement, "R" as modified by note 14, is the refueling frequency for the "Calibration" requirement, and "Q" which is quarterly for the "Test" requirement. These monitors are needed for mitigation of the accident described in the PBNP FSAR section 14.2.2, "Accidental Release-Recycle or Waste Liquid."
2. Change note (7) in TS Table 15.4.1-1 to state, "Source check is required prior to initiation of a release. Source check is an assessment of channel response by exposing the detector to a source of increased radiation. Channel check is required shiftly during a release. If monitor or isolation function is discovered inoperable discontinue release immediately." This note will be applied to the check column for the RE-218 Waste Disposal System Liquid Monitor and RE-223 Waste Distillate Overboard Monitor. The proposed surveillance requirements for these channels are appropriate because the source check will verify the operability of the channel prior to a release and the quarterly functional test requirement will verify operability of the isolation function. The shiftly channel check will continue to be used to observe for obvious abnormalities that could affect channel operability while the release is in progress. The statement to require that the release discontinue immediately will ensure that proper action is taken if the function becomes inoperable.

The revised edited Technical Specification pages for TSCR 172 are attached. The "No Significant Hazards Consideration," provided with the original submittal of TSCR 172 via letter dated May 2, 1995, has been reviewed. The conclusion that the proposed Technical Specifications changes do not pose a significant hazard remains valid, although the evaluation has been revised as follows:

In accordance with the requirements of 10 CFR 50.91(a), Wisconsin Electric Power Company (Licensee) has evaluated the proposed changes against the standards of 10 CFR 50.92 and has determined that the operation of Point Beach Nuclear Plant, Units 1 and 2 in accordance with the

proposed amendments does not present a significant hazard. The analysis of the requirements of 10 CFR 50.92 and the basis for this conclusion are as follows:

1. Operation of this facility under the proposed Technical Specifications will not create a significant increase in the probability or consequences of an accident previously evaluated.

The probabilities of accidents previously evaluated are based on the probability of initiating events for these accidents. Initiating events for accidents previously evaluated for Point Beach include: Control rod withdrawal and drop, CVCS malfunction (Boron Dilution), startup of an inactive reactor coolant loop, reduction in feedwater enthalpy, excessive load increase, losses of reactor coolant flow, loss of external electrical load, loss of normal feedwater, loss of all AC power to the auxiliaries, turbine overspeed, fuel handling accidents, accidental releases of waste liquid or gas, steam generator tube rupture, steam pipe rupture, control rod ejection, and primary coolant system ruptures.

This license amendment request proposes to change the surveillance requirements for the Point Beach Nuclear Plant Technical Specifications associated with the radiation monitoring system.

These proposed changes do not cause an increase in the probabilities of any accidents previously evaluated because these changes will not cause an increase in the probability of any initiating events for accidents previously evaluated. In particular, these changes affect radiation monitors which do not cause accidents.

The consequences of the accidents previously evaluated in the PBNP FSAR are determined by the results of analyses that are based on initial conditions of the plant, the type of accident, transient response of the plant, and the operation and failure of equipment and systems. The changes proposed in this license amendment request provide appropriate surveillance requirements for the radiation monitoring system.

The proposed changes reduce the burden associated with radiation monitoring system required surveillance by establishing surveillances for only the necessary monitors (i.e. elimination of the testing requirement for monitors that do not perform a required function) and changing the testing frequency for these monitors from monthly to quarterly. The proposed changes do not increase the probability of failure of this equipment or its ability to operate as required for the accidents previously evaluated in the PBNP FSAR.

Therefore, this proposed license amendment does not affect the consequences of any accident previously evaluated in the Point Beach Nuclear Plant FSAR, because the factors that are used to determine the consequences of accidents are not being changed.

2. Operation of this facility under the proposed Technical Specifications change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

New or different kinds of accidents can only be created by new or different accident initiators or sequences. New and different types of accidents (different from those that were originally analyzed for Point Beach) have been evaluated and incorporated into the licensing basis for Point Beach Nuclear Plant. Examples of different accidents that have been incorporated into the Point Beach Licensing basis include anticipated transients without scram and station blackout.

The changes proposed by this license amendment request do not create any new or different accident initiators or sequences because these changes to the surveillance requirements for the radiation monitoring system will not cause failures of equipment or accident sequences different than the accidents previously evaluated. Therefore, these proposed Technical Specification changes do not create the possibility of an accident of a different type than any previously evaluated in the Point Beach FSAR.

3. Operation of this facility under the proposed Technical Specifications change will not create a significant reduction in a margin of safety.

The margins of safety for Point Beach are based on the design and operation of the reactor and containment and the safety systems that provide their protection. The changes proposed by this license amendment request provide the appropriate surveillance requirements for the radiation monitoring system. The revised surveillance requirements will continue to ensure that the required radiation monitors will operate as required. The design and operation of the reactor and containment are not affected by these proposed changes. Therefore, the margins of safety for Point Beach are not being reduced because the design and operation of the reactor and containment are not being changed.

TABLE 15.4.1-1 (continued)

NO.	CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	PLANT CONDITIONS WHEN REQUIRED
20.	Auxiliary Feedwater Flowrate	(13)	R	-	ALL
21.	Boric Acid Control System	-	R	-	ALL
22.	Boric Acid Tank Level	D	R	-	ALL
23.	Charging Flow	-	R	-	ALL
24.	Condensate Storage Tank Level	S(1)	R	-	ALL
25.	Containment High Range Radiation	S(1)	R(14)	M(1) Q(1)	ALL
26.	Containment Hydrogen Monitor	D	-	-	ALL
	-Gas Calibration	-	Q(15)	-	ALL
	-Electronic Calibration	-	R	-	ALL
27.	Containment Pressure	S	R	Q(1,3,9)	ALL
28.	Containment Water Level	M	R	-	ALL
29.	Emergency Plan Radiation Survey Instruments	Q	R	Q	ALL
30.	Environmental Monitors	M	-	-	ALL
31.	In-Core Thermocouples	M	R(14)	-	ALL
32.	Low Temperature Overpressure Protection Systems	S(12)	R	(10)	ALL
33.	PORV Block Valve Position Indicator	Q	R	-	ALL
34.	PORV Operability	-	R	Q(11)	ALL
35.	PORV Position Indicator	S(21)	R	R	ALL

TABLE 15.4.1-1 (continued)

NO.	CHANNEL DESCRIPTION	CHECK	CALIBRATE	TEST	PLANT CONDITIONS WHEN REQUIRED
36.	Radiation Monitoring System	D(7)	R(7)	M(7)	ALL
	-RE-218 WDS Liquid Monitor	(7)	R(14)	Q	ALL
	-RE-223 Waste Dist. Rate Overboard Monitor	(7)	R(14)	Q	ALL
	-RE-231 A Steam Line Release Monitor	S(1)	R(14)	Q(1)	ALL
	-RE-232 B Steam Line Release Monitor	S(1)	R(14)	Q(1)	ALL
37.	Reactor Vessel Fluid Level System	M	R	-	ALL
38.	Refueling Water Storage Tank Level	-	R	-	ALL
39.	Residual Heat Removal Pump Flow	-	R	-	ALL
40.	Safety Valve Position Indicator	M	R	-	ALL
41.	Subcooling Margin Monitor	M	R	-	ALL
42.	Turbine Overspeed Trips				
	-Independent Overspeed Protection System	-	R	M(1)	ALL
	-Overspeed Block trip	-	R	M(1)	ALL
43.	Volume Control Tank Level	-	R	-	ALL
44.	Reactor Protection System and Emergency Safety Feature Actuation System Logic	-	-	M(1,23)	ALL
45.	Reactor Trip System Interlocks				
	-Intermediate Range Neutron Flux, P-6	-	R(24)	R	ALL
	-Power Range Neutron Flux, P-8	-	R(24)	R	ALL
	-Power Range Neutron Flux, P-9	-	R(24)	R	ALL
	-Power Range Neutron Flux, P-10	-	R(24)	R	ALL
	-1st Stage Turbine Impulse Pressure	-	R(24)	R	ALL

NOTATION USED IN TABLE 15.4.1-1

S- Each shift
D- Daily
W- Weekly
Q- Quarterly
M- Monthly
P- Prior to reactor criticality if not performed during the previous week.
R- Each refueling interval (but not to exceed 18 months)
PWR- Power and Low Power Operation, as defined in Specifications 15.1.h. and 15.1.n.
HGT S/D- Hot Shutdown, as defined in Specification 15.1.g.1.
COLD S/D- Cold Shutdown, as defined in Specification 15.1.g.2.
REF S/D- Refueling Shutdown, as defined in Specification 15.1.g.3.
ALL- All conditions of operation, as defined in Specifications 15.1.g, h and n.

NOTES USED IN TABLE 15.4.1-1

- (1) Not required during periods of refueling shutdown, but must be performed prior to reactor criticality if it has not been performed during the previous surveillance period.
- (2) Tests of the low power trip bistable setpoints which cannot be done during power operations shall be conducted prior to reactor criticality if not done in the previous surveillance interval.
- (3) Perform test of the isolation valve signal.
- (4) Perform by means of the moveable Incore detector system.
- (5) Recalibrate if the absolute difference is ≥ 3 percent.
- (6) Verification of proper breaker alignment and that the 120 Vac Instrument buses are energized.
- (7) ~~Radioactive Effluent Monitoring Instrumentation Surveillance Requirements are specified in Section 15.7.4.~~
- (8) Verify that the associated rod insertion limit is not being violated at least once per 4 hours whenever the rod insertion limit alarm for a control bank is inoperable.
- (9) Test of Narrow Range Pressure, 3.0 psig, -3.0 psig excluded.

Source check is required prior to initiation of a release. Source check is an assessment of channel response by exposing the detector to a source of increased radiation. Channel check is required shiftly during a release. If monitor or isolation function is discovered inoperable, discontinue release immediately.