

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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SUBJECT: Forwards responses to SER open items re initial test program, to be incorporated into next FSAR amend. Meeting to resolve disputed open items suggested prior to 810312 safety evaluation.

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Washington Public Power Supply System

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December 30, 1981
G02-81-564
SS-L-02-CDT-81-117

Docket No. 50-397

Mr. A. Schwencer, Director
Licensing Branch No. 2
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555



Dear Mr. Schwencer:

Subject: NUCLEAR PROJECT NO. 2
REQUEST FOR ADDITIONAL INFORMATION
REGARDING THE INITIAL TEST PROGRAM
FOR WNP-2 SER OPEN ITEMS

Enclosed are sixty (60) copies of the Supply System responses to SER Open items regarding the initial test program for WNP-2. These responses will be incorporated into the next amendment to the FSAR.

Please note that the Supply System is in disagreement with several of the NRC positions which would require additional testing of the WNP-2 facility. To prevent these items from appearing as open items in our March 12, 1981 SER, we are available to meet as soon as possible to resolve these issues. The information transmitted herein can serve as a basis for such a meeting. Since the consultant who performed the NRC review is located at Hanford in the Tri Cities, we propose that a meeting (if required) be held in Richland.

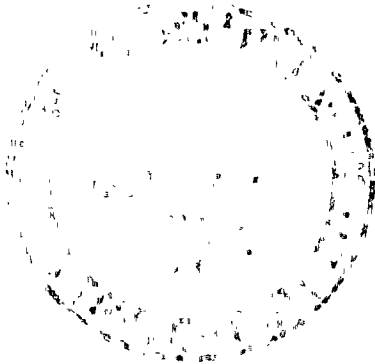
Very truly yours,

G. D. Bouchey, Deputy Director
Safety & Security

CDT/jca
Enclosures

cc: R Auluck - NRC
WS Chin - BPA
R Feil - NRC Site

Boo1
5/11



11

SER OPEN ITEMS FOR WNP-2

- 423.21 Modify Subsection 14.2.12.1.14 or other test descriptions to ensure that the High Pressure Core Spray system is tested at normal operating pressure.
- 423.30
1. Add missing Level 1 acceptance criteria for startup test description 72.
 - 3a. Modify Subsection 14.2.12.3.5.4 as stated in your response.
 4. Provide a Rod Sequence Exchange Startup test which will be conducted at the highest power level at which control rod pattern exchanges will be allowed and delete this exception to Regulatory Guide 1.68 in Appendix C.
 6. Modify your response to item 423.23 part b. to remain consistent with revised Subsection 14.2.12.3.14.
 8. Modify Subsection 14.2.12.3.24.4 to state that the criteria used for evaluating reactor pressure transient response is adequate to ensure both minimum and maximum bounds on bypass valve capacity.
 10. In Subsection 14.2.12.3.26 the $\pm 2\%$ criteria is extremely restrictive given the individual valve capacity tolerances. Explain.
 - 11b. Revise Table 14.2-2 and Table 14.2-4 to state that a generator load rejection is performed at 100% power and that a turbine trip is performed at 75% power in accordance with your response.
 12. Modify Subsection 14.2.12.3.38 to scram the reactor and close MSIV's from a location outside the main control room. Modify Appendix C to delete this exception to Regulatory Guide 1.68.2.

13. Demonstrate that the dynamic response of the plant is in accordance with design for a simultaneous trip of both recirculation pumps at 100% power.
 14. Modify Subsection 14.2.12.3.31 to state that the loss of offsite power will be maintained for 30 minutes as stated in your response.
- 423.33 Modify Table 14.2-3 to include the Turbine Valve Surveillance test (#24) as stated in Subsection 14.2.10.3(12).
- 423.36 This question is no longer under our jurisdiction. It will be dealt with by the LOB.
- 423.39 Modify your response to this item and Subsection 14.2.12.1.18 to include analytical determination of process variable-to-input response times and add this time delay to the input-to-scam trip actuator response time to determine conformance with Technical Specifications.
- 423.41
1. Modify Subsection 14.2.12.1.37 to reflect your response to parts a. and c. of this item; specifically, include design load testing and monitoring of untested buses for voltage.
 2. Part c. Your response refers to the Reactor Building Primary Containment Cooling and Purging Preoperational Test (14.2.12.1.32). This test is not described in Chapter 14. Either provide this test or provide the correct test and reference that demonstrates combustible gas control capability.
- Part d. Modify Subsection 14.2.12.3.17 to state that all hot pipe containment penetrations are monitored and to supply acceptance criteria for penetration temperatures.
- Part e. This test description does not adequately indicate that sufficient testing of the Seismic Monitoring System is accomplished. Expand Subsection 14.2.12.1.57 accordingly.

Part g. Modify Subsection 14.2.12.1.48 to include the information contained in your response.

Part i. Modify Subsection 14.2.12.1.34 to include the information contained in your response.

3. Provide a preoperational test on the control air systems which describes loss of air supply tests in accordance with Regulatory Guide 1.80.
4. Regulatory Guide 1.108, Revision 1 (August 1977), is applicable to your facility. Modify the appropriate test descriptions to meet the quantitative requirements of this guide. Modify Appendix C accordingly.
- 423.42 7. Modify Table 14.2-4 and Subsection 14.2.12.3.25 of tests that simultaneous full closure of all MSIV's will be established at TC-6 (96-100% power) in accordance with Regulatory Guide 1.68, Appendix A. 5.m.m.

Several items originally included in the errata deserve special attention.

They are as follows:

1. Modify Subsection 14.2.7.3.6 to state that Section 17.2 will be in compliance with Regulatory Guide 1.33, not vice versa.
2. Modify Subsection 14.2.12.3.16.4 to state that coolant temperatures between steam dome and bottom head drain are within 100°F (56°C), not (38°C).
3. Modify Subsection 14.2.12.3.19.3 to include minimum critical power ratio (MCPR).
4. Clarify the usage of "0.13.0 Hz" in Subsection 14.2.12.3.22.3.

423.21

FSAR 14.2.12.1.14.c(5) requires High Pressure Core Spray (HPCS) system verification of low paths and flow rates. The HPCS pump will be operated over the full spectrum of flows and the results compared to the pump curves. This test will show what the flow rate will be under any operating pressure.

423.30

- .1 FSAR Section 14.2.12.3.38.4 has been modified to indicate that level 1 criteria is not applicable.
- .3a The previous response to this question incorrectly indicated that the criteria were modified to define scram time limits for even rod positions. Actually the rod position information system (RPIS) utilizes odd position data for scram time determination. The original FSAR page is correct. A clarification statement has been added to the scram time criteria to indicate that the numbers apply at any reactor pressure.
- .4 The Supply System reiterates its position on the need to include a Rod Sequence Exchange Startup Test in the WNP-2 Startup Test Program. This test is not justified as previously discussed in our response to 423.30.4.
- .6 The response to item 423.23b has been modified to remain consistent with our later response to 423.30.6.
- .8 It is inappropriate to address bypass valve capacity or its adequacy in FSAR subsection 14.2.12.3.24. Bypass valve capacity is unrelated to the stated purposes of STP #24 (subsection 14.2.12.3.24). As discussed in our response to 423.30.8 previously submitted, FSAR subsection 14.2.12.3.27 addresses bypass valve system performance. Successful completion of this latter test is adequate to ensure proper bypass valve performance.
- .10 The $\pm 2\%$ criteria on total relief valve capacity is a level 1 criteria. The $\pm 2\%$ criteria is established from rated steam flow. Violation of the level 1 criteria places the WNP-2 Vessel Overpressurization Protection Analysis in question. The restrictiveness of the acceptance criteria is appropriate considering the implication of violating it. The acceptance criteria on individual valve capacity is a level 2 criteria, which expresses engineering expected component performance. Since there are 18 SRVs on WNP-2, individual component performance (i.e., individual SRV capacity) can fluctuate as long as the total system performance is within the level 1 criteria. Note that the $+35\%$, -10% criteria is established on individual capacity (nominally approximately 850,000 lbs./hr.) while the level 1 2% figure relates to rated steam flow of approximately 14.3×10^6 lbs./hr. Therefore, the absolute values of the tolerances are not so disproportionate as is first apparent.
- .11b Tables 14.2-2 and 14.2-4 have been modified to reflect commitments made in our response to 423.30.11b.
- .12 The Supply System reiterates its position with regard to the referenced R.G. 1.68.2 exception. The capability easily exists to effect a reactor scram and MSIV isolation from outside the control room. However, our normal operating and emergency operating procedures must be used to conduct the Startup Test Program. These requirements on STP #28 are contrary to our plant procedures, therefore, we cannot support performing the test in the manner prescribed.

- .13 The design dynamic response of the plant to a simultaneous trip of both recirculation pumps at 100% power produces a reactor scram. Our test program does not produce transients solely to confirm that a reactor scram occurs when it should. All data pertinent to a two-pump trip from high power transient is obtained in conjunction with other tests, therefore, it is not necessary to include this specific test in the program.
- .14 FSAR subsection 14.2.12.3.31 has been modified to indicate that the loss of offsite power condition will be maintained for 30 minutes.

423.33

Table 14.2-3 has been modified to include STP #24 testing.

423.39

The Reactor Protection System (RPS) is designed to meet the intent of IEEE-279 for nuclear power plant protection systems. The measurement of the response time as required by the Technical Specifications provides assurance that the protective functions are completed within the time limit assumed in the accident analysis. The time limits in the Technical Specifications are measurements from the sensor input to the reactor protection scram solenoids. These limits will be verified in the Reactor Protection System Preoperational Test (14.2.12.1.18).

There are no known requirements for WNP-2 to perform an analytical determination of the process variable-to-input response times and add the delay to the time measured in the reactor protection system preoperational test. Therefore, we are not planning to include this in our surveillance of RPS sensor response.

423.41.1 Subsection 14.2.12.1.37 has been modified to include load testing and monitoring of untested busses for voltage.

423.41.2.c

The previous response incorrectly referred to the Reactor Building Primary Containment Cooling and Purging System. The post-LOCA hydrogen monitors are actually part of the Primary Containment Atmospheric Monitoring System and will be tested per 14.2.12.1.35. The combination of the Primary Containment Atmospheric Control System Preoperational Test (14.2.12.1.32) and the Primary Containment Atmospheric Monitoring System Preoperational Test (14.2.12.1.35) will perform the function of testing the combustible gas control capability.

423.41.2
part d

There are approximately 170 pipe penetrations through the WNP-2 primary containment vessel (PCV). Of these, some 23 are "type 1" hot pipe penetrations. There are 10 type 1 penetrations with process fluid temperatures in excess of 2500F during normal operation. Most of these (7 of 10) are not readily accessible when the plant is at rated temperature and pressure conditions. It is, therefore, not practical to monitor all 23 hot pipe penetrations. As an alternative, the Supply System proposes to monitor two hot pipe penetrations (one on either a main steam or feedwater pipe penetration and one on either steam supply line penetration to the RCIC or RHR systems) for design verification purposes. Test acceptance criteria have not been developed to date. However, they would be expected to demonstrate compliance with design requirements.

423.41.2.e

The Seismic Monitoring System Preoperational Test described in section 14.2.12.1.57 completely tests the system. The System Lineup Testing required by part b (Prerequisites) ensures the proper operation and calibration of each of the system components to applicable documents (i.e., drawings, data sheets, etc.). The actual preoperational test ensures the integrated operation of the system meets the design. The Seismic Monitoring System consists of 1) Annunciators and 2) Instrumentation (i.e., recorders, accelerometers, etc.).

423.41.2.g

Subsection 14.2.12.1.48 has been modified to include verification of 1) pumps NPSH and lack of vortexing, 2) proper operation of basin siphon crossconnection.

423.41.2.i

Subsection 14.2.12.1.34 is not an appropriate reference for this question. Subsection 14.2.12.1.17 has been modified to include the design requirement that the end product of the solid radwaste system must be free standing and contain no free liquid.

423.41.3 The Control/Instrument Air System will be tested using an Acceptance Test. An Acceptance Test is similar to a preoperational test and is performed on non-safety-related systems. The Control/Instrument Air System at WNP-2 is non-safety-related. The Acceptance Test for the Control/Instrument Air System will meet the intent of Regulatory Guide 1.80, Rev. 0, June 1974 (FSAR Appendix C).

~~WNP-2~~ WNP-2

423.41.4 Regulatory Guide 1.108 is not applicable to WNP-2 but will comply with the intent of this regulatory guide. Diesel Generator testing is designed to meet the requirements of IEEE-387, 1977 and the intent of Regulatory Guide 1.108, Rev. 0.

Diesel Generators are tested to demonstrate full load and overload capabilities, redundancy and non-interdependence, load rejection capabilities, synchronizing and load shifting, load acceptance during normal and accident conditions, capabilities and operation of support systems (i.e., lube oil, fuel oil and starting air), starting time, voltage and frequency stability and functional capabilities will be verified under hot and cold conditions.

These tests are described in the Standby AC Power System Preoperational Test (14.2.12.1.37), the Loss of Power and Safety Testing Preoperational Test (14.2.12.1.37) and the Loss of Turbine Generator and Offsite Power Test (14.2.12.3.31).

intent?

423.42.7 The Supply System reiterates its position on the required power level for a valid MSIV Full Isolation test as discussed in our previous 423.42.7 response. The R.G. 1.68 requirement is an approximate power level value. Table 14.2-4 presently stipulates that the test is to be conducted at Test Condition 6 which is 96 - 100% power. Should no valid, inadvertent trip occur, the MSIV Full Closure will be conducted as Table 14.2-4 states.

- 1) Subsection 14.2.7.3.b has been modified to reflect the proper relationship between R.G. 1.33 and section 17.2.
- 2) Subsection 14.2.12.3.16.4 has been corrected.
- 3) The minimum critical power ratio (MCPR) has been included in subsection 14.2.12.3.19.3.
- 4) "0.13.0 hz" is a typographical error. This has been corrected to read "0.1-3.0 hz" in subsection 14.2.12.3.22.3.

except where specifically noted otherwise. This Regulatory Guide has been reviewed by WPPSS for applicability of individual items in the guide to the WNP-2 and its systems. The applicability to this plant has determined the nature and scope of testing to be performed. Actual exceptions to the testing required by this guide have been specifically addressed and are discussed in 14.2.7.2. Areas where the guide does not apply are not considered to be exceptions.

14.2.7.2 Exceptions to Regulatory Guide 1.68

The exceptions to Regulatory Guide 1.68 are listed below with an explanation of the justification for the exception.

a. Exception to Format of Test Procedures

The format of the test procedures is different from that found in Appendix C of Regulatory Guide 1.68, but the difference is not considered an exception to the Regulatory Guide since the guide specifies required elements of a test procedure while merely implying a format.

14.2.7.3 Conformance with or Exceptions to Regulatory Guides other than 1.68

- a. Regulatory Guide 1.70, "Standard Format and Content of the Safety Analysis Reports for Nuclear Power Plants" will be complied with for the section which pertains to the Test and Startup Program.
- b. Regulatory Guide 1.33, "Quality Assurance ~~compliance with~~ Program Requirements" will be ~~in compliance with~~ the "Operational Quality Assurance Report" section 17.2 of the FSAR for the Test and Startup Program.
- c. All other regulatory guides pertaining to individual tests will be complied with unless noted otherwise in 14.2.12.

14.2.12.3.5.4 Criteria

Level 1

Each CRD must have a normal withdraw speed less than or equal to 3.6 inches per second (9.14 cm/sec), indicated by a full 12-foot stroke in greater than or equal to 40 seconds.

The mean scram time of all operable CRDs ^{at any reactor pressure} must not exceed the following times: (Scram time is measured from the time the pilot scram valve solenoids are deenergized.)

<u>Rod Position</u>	<u>Scram Time (Seconds)</u>
45	0.430
39	0.868
25	1.936
05	3.497

at any reactor pressure

The mean scram time of the three fastest CRDs in a two by two array must not exceed the following times: (Scram time is measured from the time the pilot scram valve solenoids are deenergized.)

<u>Rod Position</u>	<u>Scram Time (Seconds)</u>
45	0.455
39	0.920
25	2.052
05	3.706

Level 2

Each CRD must have a normal insert or withdraw speed of 3.0 ± 0.6 inches per second (7.62 ± 1.52 cm/sec), indicated by a full 12-foot stroke in 40 to 60 seconds.

14.2.12.3.16.4 Criteria

Level 1

- a. The reactor recirculation pumps shall not be started nor flow increased unless the coolant temperatures between the steam dome and bottom head drain are within 100°F (38°C).
- b. The recirculation pump in an idle loop must not be started unless the loop suction temperature is within 50°F (28°C) of the steam dome temperature.

Level 2

During two pump operation at rated core flow, the bottom head temperature as measured by the bottom drain line thermocouple should be within 30°F (17°C) of the recirculation loop temperatures.

14.2.12.3.19 Test Number 19 - Core Performance

14.2.12.3.19.1 Purpose

The purposes of this test are a) to evaluate the core thermal power and b) to evaluate the following core performance parameters: 1) maximum linear heat generation rate (MLHGR), 2) minimum critical power ratio (MCPR) and 3) maximum average planar linear heat generation rate (MAPLHGR).

14.2.12.3.19.2 Prerequisites

The Preoperational Tests have been completed, the POC has reviewed and the Plant Manager has approved the test procedures and initiation of testing. System instrumentation installed and calibrated and test instrumentation calibrated.

14.2.12.3.19.3 Description

The core performance evaluation is employed to determine the principal thermal and hydraulic parameters associated with core behavior. These parameters are:

Core flow rate
Core thermal power level
MLHGR
MAPLHGR
MCPR

The core performance parameters listed above will be evaluated by manual calculation techniques described in Startup Test Instruction 19 or may be obtained from the process computer.

If the process computer is used as a primary means to obtain these parameters, it must be proven that it agrees with BUCLE within 2% on all thermal parameters (see Test Number 13), or the results must be corrected to do so. If the BUCLE and process computer results do not agree within 2% for any thermal parameter, the parameter calculated by the process computer will be corrected by a multiplication factor to bring it within the 2% criteria.

14.2.12.3.22 Test Number 22 - Pressure Regulator

14.2.12.3.22.1 Purpose

The purposes of this test are a) to determine the optimum settings for the pressure control loop by analysis of the transients induced in the reactor pressure control system by means of the pressure regulators, b) to demonstrate the takeover capability of the backup pressure regulator upon failure of the controlling pressure regulator and to set spacing between the set points at an appropriate value and c) to demonstrate smooth pressure control transition between the control valves and bypass valves when reactor steam generation exceeds steam used by the turbine.

14.2.12.3.22.2 Prerequisites

The Preoperational Tests have been completed, the POC has reviewed and the Plant Manager has approved the test procedures and initiation of testing. Instrumentation has been checked or calibrated as appropriate.

14.2.12.3.22.3 Description

The pressure set point will be decreased rapidly and then increased rapidly by about 10 psi (0.7 kg/cm²) and the response of the system will be measured in each case. It is desirable to accomplish the set point change in less than 1 second. At specified test conditions the load limit setpoint will be set so that the transient is handled by control valves, bypass valves and both. The backup regulator will be tested by simulating a failure of the operating pressure regulator so that the backup regulator takes over control. The response of the system will be measured and evaluated and regulator settings will be optimized. Because the near step transient occurs downstream of the log filter, this disturbance yields valuable stability data in the midfrequency range (i.e., ~~0.1-3.0~~ Hz).

0.1-3.0

The principal control systems will be in their normal operating mode for the given test condition. In addition, at test conditions 3, 5 and 6 the test will be performed with the recirculation control system in the local manual control mode.

14.2.12.3.31 Test Number 31 - Loss of Turbine-Generator and Offsite Power

14.2.12.3.31.1 Purpose

The purpose of this test is to determine the reactor transient performance during the loss of the main generator and all offsite power, and to demonstrate acceptable performance of the station electrical supply system.

14.2.12.3.31.2 Prerequisites

The Preoperational Tests have been completed, the POC has reviewed and the Plant Manager has approved the test procedures and initiation of testing. Instrumentation has been checked or calibrated as appropriate. The plant electrical system will be aligned in the normal mode for the operating conditions at which the test is performed.

14.2.12.3.31.3 Description

The loss of auxiliary power test will be performed at 20 to 30% of rated power. The proper response of reactor plant equipment, automatic switching equipment, and the proper sequencing of the diesel generator load will be checked. Appropriate reactor parameters will be recorded during the resultant transient. The trip will be initiated by tripping the main turbine and opening the breakers supplying offsite power or preventing the closure of breakers supplying offsite power. *The loss of offsite power conditions will be maintained for a minimum of 30 minutes to demonstrate proper O/G system performance.*

14.2.12.3.31.4 Criteria

Level 1

Reactor pressure shall be maintained below the set point of the first safety valve, during the transient following the loss of the main generator and all offsite power. All safety systems, such as the Reactor Protection System, the diesel-generator, RCIC and HPCS, must function properly without manual assistance.

Level 2

The maximum reactor pressure should be less than 40 psi (2.8 kg/cm²) below the first safety valve set point, during the transient following the loss of the main generator and all offsite power. Normal reactor cooling systems should be able to maintain adequate suppression pool water temperature, maintain adequate drywell cooling, and prevent actuation of the auto-depressurization system. The response of the plant

14.2.12.3.38 Test Number 72 - Drywell Atmosphere Cooling System

14.2.12.3.38.1 Purpose

The purpose of this test is to verify the ability of the Drywell Atmosphere Cooling System to maintain design conditions in the drywell during operating conditions and post-scam conditions.

14.2.12.3.38.2 Prerequisites

The Preoperational Tests have been completed, the POC has reviewed and the Plant Manager has approved the test procedures and initiation of testing. Instrumentation has been checked or calibrated as appropriate.

14.2.12.3.38.3 Description

During heatup and power operation, data will be taken to ascertain that the drywell atmospheric conditions are within design limits.

14.2.12.3.38.4 Criteria

Level 2

The drywell cooling system shall maintain drywell air temperatures and humidity at or below the design values as specified for the NSSS equipment.

Level 1

not applicable

TABLE 14.2-2

MAJOR PLANT TRANSIENTS

<u>TEST NO.</u>	<u>TEST TITLE</u>	<u>TEST CONDITION</u>			
		<u>APPROXIMATE POWER</u>		<u>95</u>	
		<u>(% Rated)</u>	<u>20-25</u>	<u>60-75</u>	<u>80-100</u>
		<u>APPROXIMATE CORE</u>			
		<u>FLOW (% Rated)</u>	<u>37</u>	<u>100</u>	<u>100</u>
23	Feedwater Pump Trip				X
23	Loss of Feedwater Heating				X
25	MSIVs (All valves, Full Isolation)				X
27	T-G Stop Valve Fast Close			X	X*
27	T-G Control Valve Fast Close		X		X*
28	Shutdown from Outside Control Room		X		
30	Recirc. Pump Trips			X	X
31	Loss of Gen. & Offsite Power		X		
<u>Test Condition</u>			<u>1,2</u>	<u>3</u>	<u>6</u>

~~* One, but not both, of these cases will be performed.~~

14.2-155

WNP-2

 AMENDMENT NO. 20
 November 1981

TABLE 14.2-3

STABILITY TESTS

TEST NO.	TEST TITLE	TEST CONDITION					
		APPROXIMATE POWER (% Rated)		60-75 65		95- 100	40-50 45
		20	40	65	60-75	100	45
		APPROXIMATE CORE FLOW (% Rated)					
		37	50	100	55	100	NC
21	Core Power - Void Mode Response		X		X		X
22	Press. Reg. Setpoint Changes	X	X	X	X	X	X
22	Press. Reg. Backup Regulator	X	X	X	X	X	X
23	FW System: Water Level Setpoint Change		X	X	X	X	X
23	FW System: Heater Loss					X	
29	Recirculation Flow Control System	X	X	X	X	X	
	Test Condition	1	2	3	5	6	4

24 Turbine Valve Surveillance

14.2-156

WNP-2

 AMENDMENT NO. 20
 November 1981

TABLE 14.2-4 (Continued)

STI No.	TEST NAME	COLD TEST OR HEAT OPEN RPV UP						WARRANTY
		1	2	TEST CONDITIONS ¹			6	
27	Turbine Stop Valve Trip				X ^{2,13,SD}		X ^{2,13,15,SD*}	
	Generator Load Rejection		X, BP				X ^{2,13,15} → ②, SD	
28	Shutdown From Outside C Room	X						
29	Recirculation Flow Control System	L	L	H ⁴ , X ⁴ L ⁴ , A ⁴	X ^{4,14} L ⁴ , H ⁴ A ⁴	H ⁵ , A ⁵ , X ⁵ L ⁵		
30	Recirc. System: Trip One Pump				X ^{13,15}		X ^{13,15}	
	Trip Two Pumps				X ^{13,15}			
	System Performance			X ^{4,13} X ¹⁵	X ^{5,13,15}	X	X ¹³	
	Non-Cavit. Verif.				X			
31	Loss of T-G Offsite Power			X ^{2,13} SD				
32	Not Applicable							
33	Piping Vibration		X	X		X	X	
34	RPV Internals Vibration		X ⁴	X ⁴		X ⁵	X ⁵	
35	Recirc. System Flow Calibration			X			X	
36-69	Not Applicable							
70	Reactor Water Cleanup System	X						
71	Residual Heat Removal System	X	X				X	

14.2-159

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- b. See the revised description for the RCIC startup test (14.2.12.3.14). Also included in a new FSAR Figure 14.2-5 "RCIC Acceptance Criteria Curves for Capacity and Activation Time." The revised test description contains the five cold, quick starts referred to in the question. They are summarized below for clarity.

<u>Cold Start</u>	<u>Conditions</u>	<u>Purpose</u>
1	Rated Pressure, injection to vessel	Establish final controller settings
2	Rated Pressure, injection to vessel	Demonstrate ^{initiation from the} final controller settings- REMOTE control shutdown panel.
3	Rated Pressure, injection to vessel discharge to CST	Demonstrate ^{surveillance test base data /} initiation from remote control room system reliability.
4	Rated Pressure, discharge to CST	Establish surveillance test base data / <i>system reliability</i>
5	150 psig reactor Pressure, discharge to CST	Establish surveillance test base data / <i>system reliability</i>

- c. Following review of the Startup Test Number 18 - Core Power Distribution with the NSSS supplier and based on their recommendation a revised FSAR 14.2.12.3.18 was developed. Note that this test

