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United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/RENEWED LICENSE NO. DPR-23

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION RELATED TO LICENSE AMENDMENT REQUEST REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES

Ladies and Gentlemen:

By letter dated August 31, 2017, the NRC requested that Duke Energy Progress, LLC respond to a request for additional information (RAI) regarding Technical Specification Surveillance Requirement Frequencies to support 24-Month Fuel Cycles at H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

The Duke Energy Progress, LLC response to this request (General RAI-1, SRXB RAI-1 and SBPB RAI-1) is provided in Enclosures 1, 2 and 3 to this letter.

There are no regulatory commitments made in this submittal. If you have any questions regarding this submittal, please contact Mr. Tony Pilo, Manager – Nuclear Regulatory Affairs, at (843) 857-1409.

I declare under penalty of perjury that the foregoing is true and correct.

Executed On: 28 SEPTEMBER 2017

Sincerely,

Ernest J. Kapopoulos, Jr.
Site Vice President

EJK/am

Enclosure 1: RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES (GENERAL RAI-1)

Enclosure 2: RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES (SRXB RAI-1)

Enclosure 3: RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES (SBPB RAI-1)

cc: NRC Regional Administrator, NRC, Region II
D. Galvin, NRC Project Manager, NRR
NRC Resident Inspector, HBRSEP Unit No. 2
Ms. S. E. Jenkins, Manager, Infectious and Radioactive Waste Management Section (SC)
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United States Nuclear Regulatory Commission
Enclosure 1 to Serial: RNP-RA/17-0068
19 Pages (including cover page)

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES (GENERAL RAI-1)

General RAI – 1

In Enclosure 1 of Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle," dated April 2, 1991 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML031140501), it is stated, in part:

> Licensees should evaluate the effect on safety of an increase in 18-month surveillance intervals to accommodate a 24-month fuel cycle. This evaluation should support a conclusion that the effect on safety is small. Licensees should confirm that historical plant maintenance and surveillance data support this conclusion.

By letter dated April 3, 2017, as supplemented by letters dates April 3, 2017 and May 2, 2017, (ADAMS Accession Nos. ML17093A787, ML17093A796, and ML17122A223) Duke Energy Progress, LLC (the licensee) submitted a license amendment request (LAR) for H. B. Robinson Steam Electric Plant Unit No. 2 (Robinson). Attachment 8, "Non-Calibration Surveillance Failure Analysis" to the LAR lists the same three unique failure histories, as listed below, for a significant number of Surveillance Requirements (SRs):

a. On 5/3/2007, CB-1 on Battery Charger A-1 failed to trip when power was removed from the charger.

b. On 10/29/2008, input breaker CB1 on Battery Charger B-1 failed to trip on loss of alternating current voltage.

c. On 6/20/2015, when placing the PZR HTR BACK-UP GROUP "A" switch to ON, the RTGB ON indication did not illuminate as expected.

The LAR states that the test procedure and preventive maintenance task implementing these SRs are very large and test a wide range of equipment. It is not clear how these failures are representative enough to demonstrate the lack of impact of the change in SR frequency for the wide range of and diversity of the SRs.

(1.) Clarify the shared characteristics of these SRs that allow them to be treated as a group.
(2.) Confirm that the same failure histories applies to all the SRs.

(3.) Alternatively, provide the appropriate failure histories for the SRs.

The SRs with the same unique failure histories are below.

TS 3.3.1 Reactor Protection System (RPS) Instrumentation

SR 3.3.1.14 Perform TADOT. Note: Verification of setpoint is not required.

Table 3.3.1-1, Function 16: Safety Injection (SI) Input from Engineered Safety Feature Actuation System (ESFAS)

TS 3.3.2 Engineered Safety Feature Actuation System (ESFAS) Instrumentation

SR 3.3.2.3 Perform MASTER RELAY TEST.
SR 3.3.2.5 Perform SLAVE RELAY TEST.

Table 3.3.2-1, Function 1.b: Safety Injection – Automatic Actuation Logic and Actuation Relays
Table 3.3.2-1, Function 3.a.2: Containment Isolation - Phase A Isolation – Automatic Actuation Logic and Actuation Relays
Table 3.3.2-1, Function 5.a: Feedwater Isolation - Automatic Actuation Logic and Actuation Relays

SR 3.3.2.6 Perform TADOT. Note: Verification of setpoint is not required.

Table 3.3.2-1, Function 1.a: Safety Injection – Manual Initiation
Table 3.3.2-1, Function 3.a.1: Containment Isolation – Phase A Isolation - Manual Initiation

TS 3.3.3 Post Accident Monitoring (PAM) Instrumentation

SR 3.3.3.3 Perform TADOT. Note: Verification of setpoint is not required.

Table 3.3.3-1, Function 9: Containment Isolation Valve Position

TS 3.3.6 Containment Ventilation Isolation Instrumentation

SR 3.3.6.3 Perform MASTER RELAY TEST.
SR 3.3.6.5 Perform SLAVE RELAY TEST.

Table 3.3.6-1, Function 2: Automatic Actuation Logic and Actuation Relays

SR 3.3.6.6 Perform TADOT. Note: Verification of setpoint is not required.

Table 3.3.6-1, Function 1: Manual Initiation

TS 3.3.8 Auxiliary Feedwater (AFW) System Instrumentation

SR 3.3.8.3 Perform TADOT.

Table 3.3.8-1, Function 3: Automatic Actuation Logic and Actuation Relays

TS 3.4.9 Pressurizer

SR 3.4.9.2 Verify capacity of required pressurizer heaters is ≥ 125KW

SR 3.4.9.3 Verify required pressurizer heaters are capable of being powered from an emergency supply

TS 3.5.2 Emergency Core Cooling Systems (ECCS) - Operating

SR 3.5.2.4 Verify each ECCS automatic valve in the flow path that is locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal

SR 3.5.2.5 Verify each ECCS pump starts automatically on an actual or simulated actuation signal

TS 3.6.3 Containment Isolation Valves

SR 3.6.3.5 Verify each automatic containment isolation valve that is not locked, sealed or otherwise secured in position, actuates to the isolation position on an actual or simulated actuation signal

TS 3.6.6 Containment Spray and Cooling Systems

SR 3.6.6.7 Verify each containment cooling train starts automatically on an actual or simulated actuation signal

TS 3.6.8 Isolation Valve Seal Water (IVSW) System

SR 3.6.8.4 Verify each automatic valve in the IVSW System actuates to the correct position on an actual or simulated actuation signal

TS 3.7.4 Auxiliary Feedwater (AFW) System

SR 3.7.4.3 Verify each AFW isolation valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. Note: Not applicable in MODE 4 when steam generator is being used for heat removal.

SR 3.7.4.4 Verify each AFW pump starts automatically on an actual or simulated actuation signal – Note 1. Not required to be performed for the steam driven AFW pump until 24 hours after ≥ 100 psig in the steam generator. 2. Not applicable in MODE 4 when steam generator is being used for heat removal.

TS 3.7.7 Service Water System (SWS)

SR 3.7.7.3 Verify each SWS pump and SWS booster pump starts automatically on an actual or simulated actuation signal.

TS 3.7.9 Control Room Emergency Filtration System (CREFS)

SR 3.7.9.3 Verify each CREFS train actuates on an actual or simulated actuation signal.

TS 3.8.1 AC Sources – Operating

SR 3.8.1.8 Verify each DG rejects a load greater than or equal to its associated single largest post-accident load and does not trip on overspeed. Notes: 1. This Surveillance shall not be performed in MODE 1 or 2. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9.

SR 3.8.1.10 Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ 10 seconds after auto-start achieves voltage ≥ 467 V, and after steady state conditions are reached, maintains voltage ≥ 467 V and ≤ 493 V; b. In ≤ 10 seconds after auto-start achieves frequency ≥ 58.8 Hz, and after steady state conditions are reached, maintains frequency ≥ 58.8 Hz and ≤ 61.2 Hz; c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized through the automatic load sequencer from the offsite power system. Notes: 1. All DG starts may be preceded by prelube period. 2. This Surveillance shall not be performed in MODE 1 or 2. 3. During periods when a diesel generator is being operated for testing purposes, its protective trips need not be bypassed after the diesel generator has properly assumed the load on its bus.

SR 3.8.1.9 Verify on an actual or simulated loss of offsite power signal: a. Deenergization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads through automatic load sequencer, 3. maintains steady state voltage ≥ 467 V and ≤ 493 V, 4. maintains steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes - Notes: 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4.

SR 3.8.1.15 Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. achieves steady state voltage ≥ 467 V and ≤ 493 V, 4. achieves steady state frequency ≥ 58.8 Hz and ≤ 61.2 Hz, and 5. supplies permanently connected and auto connected emergency loads for ≥ 5 minutes - Notes: 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not be performed in MODE 1, 2, 3, or 4. 3. During periods when a diesel generator is being operated for testing purposes, its

protective trips need not be bypassed after the diesel generator has properly assumed the load on its bus.

TS 3.9.3 Containment Penetrations

SR 3.9.3.2 Verify each required containment ventilation valve actuates to the isolation position on an actual or simulated actuation signal.

General RAI-1 Response:

For the review of the acceptability of Surveillance failures, a study was performed to ensure that there is no evidence of repetitive surveillance test failures which would potentially result in a decrease in the system availability from the change to a 24-month surveillance interval. To demonstrate this, a comprehensive review of the surveillance test history for 18-month Technical Specification required surveillances was performed. The study included a minimum of five (5) surveillance performances, providing a minimum of seven (7) years of data which has been proven acceptable by the USNRC in previous license submittals for interval extension [Hatch Nuclear Plant (ML012700177), DC Cook Nuclear Plant (ML041200298), and Oconee Nuclear Station (ML101330499)]. In most cases, seven (7) surveillance test performances were used for conservatism (minimum 10 years). During the study period, all 18-month surveillance interval test failures were identified and dispositioned. To simplify the evaluations necessary for this study, surveillance test failures were classified into categories which have been generically justified, with the exception of Category D, Unique Failures. The classification technique is shown in the graphic shown as 'Appendix A – Categorization Flow Chart'. All the failures were evaluated per an Engineering Change. The failures in Categories A, B, and C can be demonstrated to not change the conclusion that the impact on system availability, if any, will be small as a result of the change to a 24-month surveillance test interval. The reasons for this conclusion are listed in the flowchart. Each Category D failure was evaluated individually and collectively to ensure that repetitive failures of similar components tested by different surveillance tests would be identified. These two evaluations (failure categorization and review of unique-Category D failures) did not identify any repetitive failures which could potentially invalidate the conclusion that the impact on system availability and safety would be small from the change to a 24-month surveillance test interval.

Engineering Evaluation EC 407942 evaluated all failures. Attached is an excerpt (subset) from Appendix C of Engineering Evaluation - EC 407942. This excerpt includes the portion that evaluated all failures found for OST-163 [Safety Injection Test and Emergency Diesel Generator Auto Start On Loss OF Power and Safety Injection (Refueling)] which is categorized and dispositioned for the 24 month surveillance interval (Partial Appendix C). This section was chosen as an example as it contained the three (3) unique failures listed in the RAI and is one of the largest 18-month surveillance tests at H. B. Robinson Nuclear Plant (RNP). This type of analysis and documentation was utilized for all surveillances potentially affected by extension of the surveillance interval to 24 months.

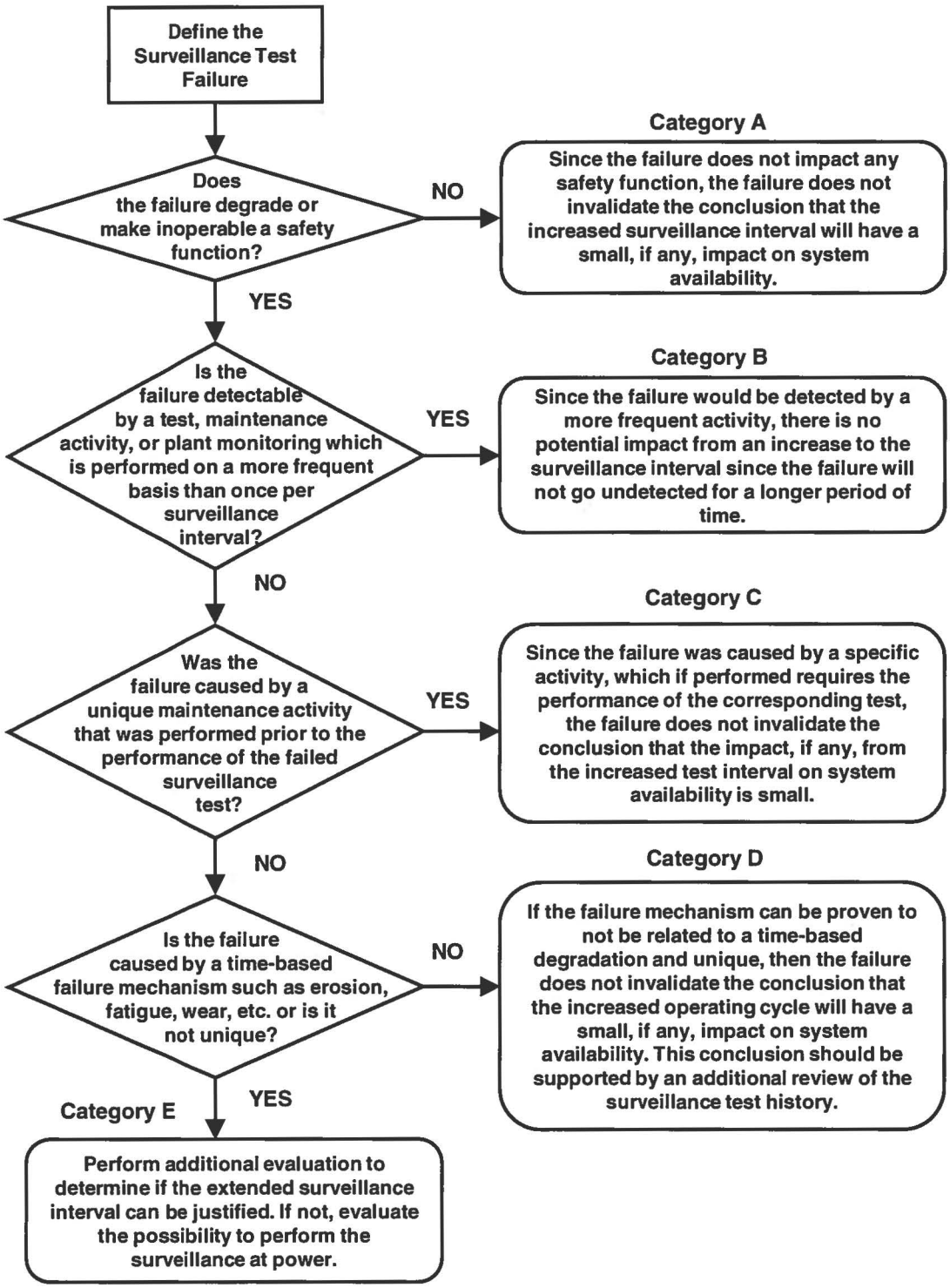
If a surveillance test was failed, the failure was conservatively applied to the failure history of all SRs which the test credited, even when only one section of the test was failed. Most failures were classified into categories that can be generically justified and shown not to change the conclusion that the impact on system availability, if any, would be small. The exception was "unique" failures. To ensure that repetitive failures of similar components tested by different surveillance tests would be identified, a separate evaluation was performed of all "unique" failures. This evaluation concluded the impact, if any, on system availability would be small. Since it was determined that there were no time based nor repetitive failures that would have a significant effect on system availability, it was not necessary to further analyze any smaller subset of the surveillance test.

In conclusion, a comprehensive review of surveillance test history was performed and all failures were systematically evaluated. This review did not identify any repetitive failures which could potentially invalidate the conclusion that the impact on system availability and safety would be small from the change to a 24-month surveillance test interval.

SUBSET OF APPENDIX C of EC 407942

TECHNICAL SPECIFICATION NON-CALIBRATION PMID-RQ FAILURE HISTORYEVALUATION

APPENDIX A – CATEGORIZATION FLOW CHART



0001373801 **OST-163 (RM) SI TEST & EDG AUTO START ON LOSS OF POWER & SI & EDG**

Reviewed By BLC **# Performances: 7** **# Failures: 15**

SR 3.3.1.14(16)
SR 3.3.2.3(1.b)
SR 3.3.2.3(3.a.2)
SR 3.3.2.3(5.a)
SR 3.3.2.5(1.b)
SR 3.3.2.5(3.a.2)
SR 3.3.2.5(5.a)
SR 3.3.2.6(1.a)
SR 3.3.2.6(3.a.1)
SR 3.3.3.3(9)
SR 3.3.6.3(2)
SR 3.3.6.5(2)
SR 3.3.6.6(1)
SR 3.3.8.3(3)
SR 3.4.9.2
SR 3.4.9.3
SR 3.5.2.4
SR 3.5.2.5
SR 3.6.3.5
SR 3.6.6.7
SR 3.6.8.4
SR 3.7.4.3
SR 3.7.4.4
SR 3.7.7.3
SR 3.7.9.3
SR 3.8.1.10
SR 3.8.1.15
SR 3.8.1.8
SR 3.8.1.9
SR 3.9.3.2

24 Month Justification:

Two failures are identified as event driven failures which are not indicative of a repetitive time based failure mechanism. Three failures are identified as unique failures which are not indicative of repetitive time based failure mechanisms. The other failures do not impact any safety function; therefore, the surveillance test history supports the proposed 24 month surveillance interval.

Failure Review:

Perf. Date	Fail Cat.	Description of Failure	Justification of Failure
10/20/2005	A	Fuse was blown on the DS UPS when starting up the UPS IAW OP-602. Additional completion comments state:	The identified failure(s) would not have prevented the performance of the required safety function of the

		"Fuse was blown in the DS UPS when starting up. Status light for CC-716B tested SAT." WO 10772531 is identified as written to address issue with a description of "PS A has failed on startup following OST-163." WO 10772531 instructions state: "When charger was started up per OP-602, output voltage could not be adjusted greater than 123 VDC with an output current of 12 A. Over the course of an hour, voltage was within the proper band. These same indications were present upon last startup when one phase of fuses had blown. Suspect same problem." WO 10772531 replaced blown KAA200 fuses in power supply "A" and returned power supply to service. The failure occurred during the restoration of the power supply following the completion of the testing of the required safety function.	equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
10/20/2005	A	Procedure completion comments states: "Flag will not reset due to failed relay." WR 10213292 written to document finding and states: "Following OST-163, APP 036-H8 alarm is locked in with DS Bus parameters in Normal Range. Refer to WO #554666 from RFO-022. Suspect same UV relay problem." WO 00772530 is referenced. WO 00772530 Task 01 completion comments state: "After comparing HBR2-7707, PIC-843 and I.L.41-201 for CV-2 relays, the determination was made that no problem exists with the relay 27-1-DSB. The relay has a built-in ICS seal-in contact which will not allow an automatic reset of the alarm (APP-036-H8). HBR2-7707 implies that the seal-in is lifted, but this requires modifying the relay by lifting a lead internally. Per Tim Halker, the alarm circuitry will remain as is and the alarm must be reset manually by momentarily recycling knife switch #10 (the red handled one) open and then closed. This will de-energize the ICS coil (if normal DS Bus Voltage has been restored) causing the alarm to clear. The ICS flag can then be reset." The failure occurred during the restoration of the relay following the completion of the testing of the required safety function.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

10/20/2005	C	Chart recorder for EDG B failed during loss of power to E1. The chart recorders are utilized as Measurement and Test Equipment to record Emergency Diesel Generator parameters during a loss of power test. As a result of the failure of the chart recorder, the test results for Emergency Diesel Generator B were not annotated for review and analysis to acceptance criteria.	This is an event driven failure in that the test equipment (chart recorder) being utilized to document the test results failed during the procedure performance. As a result, the procedure acceptance criteria was not able to confirmed as acceptable. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
5/3/2007	A	The pink/blue ECCS status light for RHR-758 on Safety Injection Status Panel did not illuminate Pink as expected. RHR-758 was in the closed position per test conditions but there was a problem with its position indication as documented in WR 10287007. Work Order 01057417 was generated for the repair of the issue. WO 01057417 Task 01 instructions state: "During Section 8.2 of OST-163, the Pink/Blue ECCS status light for RHR-758 did not illuminate. Valve was in the closed position during the test." WO completion comments state: "HCV-758 was demanded shut (0.0%). FCV-605 was controlling flow at approximately 3200 gpm. The system pressure with 2 RHR pumps sometimes running was forcing (or could be forcing) HCV-758 to stay open slightly off its closed limit switch. Therefore, its indication would remain blue since the valve was slightly open due to system pressure. OST was run on the simulator and the program has the valve go shut during OST-163. It appears that the program doesn't allow for system pressure being high enough to force the valve open. The RO on the RTGB at the time agrees that the problem may be due to system pressure during the test with flow set at 3200 gpm and two RHR pumps sometimes running. Adjusted limit switches for proper indication . Completed SAT." The failure was an "indication only" issue as a result of misalignment of the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

6/24/2010	A	Valve FCV-1932A did not indicate full closed during OST-163. Per WR 10438956, PCV-1716, Instrument Air Isolation to CV, did not show closed. Indication on ERFIS shows transition. Valve was verified to be closed locally. WR 10438956 written to address issue. WO 11777330 states: "During performance of OST-163, FCV-1932A did not show closed. Indication on ERFIS shows transition. Valve was verified to be closed locally. Suspect limit switch issue." WO 11777330 Task 01 completion comments state: Adjusted limit switch SAT." The failure was an "indication only" issue as a result of misalignment of the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
6/24/2010	A	Indicating light on Safety Injection Panel for SI-863B is not indicating Pink as expected per procedure. WR 10438958 written to address issue. WO states: "During performance of OST-163, it was noted that SI-863B, RHR Loop Recirc, pink/blue status lights did not show closed. Attempts to change bulb did not return indication. RGTB indication does show closed." WO 11777341 referenced on WR. WO 11777341 Task 01 completion comments state: "Verified fuses are good; suspect contacts dirty at limit torque valve. Inspected and cleaned limit switch contact for status light. Prior to cleaning the contact, terminal points 22 to 23 on Aux panel "JD" measured open. After cleaning the contact, terminal points measured closed (approx. zero ohms)." The failure was an "indication only" issue as a result of dirty contacts on the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

5/3/2007	D	CB-1 on Battery Charger A-1 failed to trip when power was removed from charger. WO 1056863 written to address issue. WO states that Relay K-6 is suspected to be the problem. Fuses F-14 and F-15 were checked and found to be satisfactory. Replaced the K-6 relay. Post Maintenance Test (PMT) of the battery charger breaker was performed on the same WO.	The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval. It should also be noted that Battery Charger A-1 was replaced in 2012 per EC 280186 (Master 277389) and work order 1747165 (CAS # 11747165). This replacement was to replace aging battery chargers, implement the capability to restart all four safety-related batteries when energizing after a loss of power (Appendix R related), and to add load sharing capability to permit parallel operation.
10/29/2008	A	Indicating lights on CONTAINMENT ISOLATION PHASE A panel for PRT TO ANALYZE VA-516 and VA-553 SHUT (RC-553) did not display Pink as expected. Completion comments state "RC-553 appeared to stroke closed but was just off the closed limit switch locally. ERFIS indicated "transition" which confirms the valve stroked closed from the open position when required. Appears to be a limit switch issue." WR 10356264 states: "when signaled closed during OST-163, valve travelled closed but did not close completely or give closed indication." WO 11439851 written and states: "Adjusted limits for RC-553. Performed two complete strokes of valve and verified proper indications. Visually verified valve movement during the process. Operations notified." The failure was an "indication only" issue as a result of misalignment of the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

10/29/2008	A	Indicating lights on SAFETY INJECTION status panel for SI-869 did not display Pink as expected. Completion comments state "SI-869 pink status was not illuminated. Valve was closed by indication at control switch. Changing the bulb did not correct the problem." WR 10356457 states: "SI-869 is closed and the SI status light on the RTGB does not indicate. Valve was closed by indication at the control switch." WO 11440701 written and states: "Pink and Blue status light is not lit. This ticket is for the Pink and Blue status light on the RTGB. SI-869 is closed and the safety injection light on the RTGB does not light." WO Completion comments state: "Found fuse holder that connects to TB-1-3 loose. Removed both circuit #2 fuses, one at a time, cleaned, checked continuity - good. Squeezed both fuse connection points to make a tight connection on the fuse. Reinstalled fuses. Checked indication in Control Room - SAT." The failure was an "indication only" issue as a result of the loose fuse holder for the indicating lights; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
10/29/2008	D	Input Breaker CB1 on Battery Charger B-1 failed to trip on loss of AC Voltage. WR 10356292 initiated to document finding. WO 11440102 completion comments state: "Obtained new K-6 relay from stock and bench tested SAT. Replaced relay in charger and functionally tested SAT."	The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval. It should also be noted that Battery Charger B-1 was replaced in 2012 per EC 280187 (Master EC 277389) and work order 1747166 (CAS # 11747166), This replacement was to replace aging battery chargers, implement the capability to restart all four safety-related batteries when energizing after a loss of power (Appendix R related), and to add load sharing capability to permit parallel operation.

6/24/2010	A	PCV-1716 had dual indication when tested. WR 10435692 written to document finding. WO 11764784 written for corrective maintenance. WO title: "Closed limit switch seems to be out." WO instructions state: "Fully closed ERFIS indicates transition and the status light on RTGB never indicated closed." Limit switch was adjusted SAT per the WO completion comments. WO Task 03 written to perform a PMT of the closed limit switch. PMT completed satisfactory. The failure was an "indication only" issue as a result of misalignment of the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.
6/24/2010	A	RC-553 had dual indication when tested. WR 10439106 written to document finding. WO 11777320 written for corrective maintenance. WO title: "RC-553 shows dual indication." WO instructions state: "RC-553 was closed during Phase A testing during the conduct of OST-163. Valve now shows dual indication." Limit switch was adjusted SAT per the WO completion comments. WO Task 02 written to perform a PMT of RC-553 limit switch. PMT completed satisfactory. The failure was an "indication only" issue as a result of misalignment of the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

10/28/2013	A	Not all indicating lights on CONTAINMENT ISOLATION PHASE A panel displayed Pink as expected. Comments state "Valve verified to move in closed direction and locally indicate shut. Limit switch actuated approximately 15 minutes later." Comments on Attachment 10.7 state "PS-956C, PRZ LIQUID SPACE SAMPLE, indicated mid-position, valve was verified to be locally closed, did not reposition on reset signal." WR 11602322 and WO 13309283 written to document finding. WR 11602322 states: "PS-956C did not indicate closed on ERFIS during OST-163. Local indication at the panel in the Aux Bldg near the PASS panel indicated that the valve was in the intermediate position. This may indicate a problem with the limit switch for the valve." WO 13309283 completion comments state: "Found PS-956C not indicating closed on ERFIS and switch was out of adjustment. Adjusted closed switch to closed position only. Left switch operating SAT. Closed position showing closed; open position showing open. Performed FME - closeout SAT." The failure was an "indication only" issue as a result of misalignment of the limit switch; the actual valve position was as expected.	The identified failure(s) would not have prevented the performance of the required safety function of the equipment. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

6/20/2015	C	Indicating lights on CONTAINMENT ISOLATION PHASE A panel for FP-249 and FP-258 did not display Pink as expected. WR 11676193 (FP-249) and WR 11676192 (FP-258) written to address findings. WO 13535461 initiated to perform troubleshooting. WO completion comments state: "Performed troubleshooting per WO instructions. Found relay CA23X wired incorrectly. NCR 755233. Wires that were supposed to be landed on terminals 23 and 24 were landed on terminals 7 and 8. Task 02 of this WO was initiated for needed repairs. "Task 02 rewired relay CA23X per WO instructions IAW plant drawings per PM-049. Wires were found landed on terms 7 and 8 and were moved (re-landed) to terminals 23 and 24 per plant drawings. CWDs 749, 751, and 5379-03235. Completed SAT." Action Request 00755033 states that this relay was replaced during RO-29 on WO 2101372-01.	This is an event driven failure in that the replacement of relay CA23X during RO-29 (in 2014) and the subsequent incorrect wiring of the relay during replacement contributed directly to the As Found condition. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

6/20/2015	D	When placing the PZR HTR BACK-UP GROUP "A" switch to ON, the RTGB ON indication did not illuminate as expected. Notes in procedure state: "52/2C did not close from RTGB. WR 11676262 submitted. NCR755112. 52/2C closed from local control station in Rod Control Room." WO 13535588 written to address corrective action. WO completion comments state: "Removed control power fuses for 52/2C. Lifted cable C2131G at Aux Panel "AF". Measured continuity between B to W, R to G, and O to U. All readings were OPEN. Relanded cable C2131G and reinstalled fuses. Racked 52/2C to test, cycled breaker SAT. Removed fuses, verified circuit at remote switch station from RTGB to breaker - all SAT. Checked breaker alarm switches - all SAT. Opened back-up "A" heater breakers, racked 52/2C in and had Ops cycle breaker three times - no problems. Found wiring discrepancies in local HTR control box; indicating lights are energized in Remote and drawing B-190628 sht. 131 shows they should be OFF." The Correct Only Evaluation (COE) of NCR 00755112 states that although the breaker did not close from the RTGB, it would close when operated from the local position. The COE goes on to state that no issues were found during troubleshooting and the breaker was cycled several times from the RTGB with no issues. NCR 00755505 documents a similar condition in 2013 (RFO-28) on this same breaker. NCR 00755505 concluded that although there was a repeat failure of the breaker in both RFO-28 and RFO-29, they were not identical failures.	The identified failure is unique and does not occur on a repetitive basis and is not associated with a time-based failure mechanism. Therefore, this failure will have no impact on an extension to a 24 month surveillance interval.

United States Nuclear Regulatory Commission
Enclosure 2 to Serial: RNP-RA/17-0068
3 Pages (including cover page)

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES (SRXB RAI-1)

SRXB RAI – 1

In Enclosure 1 of GL 91-04 it is stated, in part:

> Licensees should evaluate the effect on safety of an increase in 18-month surveillance intervals to accommodate a 24-month fuel cycle. This evaluation should support a conclusion that the effect on safety is small. Licensees should confirm that historical plant maintenance and surveillance data support this conclusion.

The staff noted that no failure histories were provided in Attachment 6 of the LAR for the following SR:

> SR 3.4.1.4 Verify by precision heat balance that RCS total flow rate is ≥ 97.3×10^6 lbm/hr

Attachment 8 of the LAR states in part for SR 3.4.1.4, "There is no evaluation required for extension of this SR." However, no justification for this statement was provided. The NRC staff requests the licensee to provide the failure histories of the above mentioned SR in accordance with the GL 91-04, or to provide justification as to why it is not required.

SRXB RAI – 1 Response:

Correction for RAI: The information quoted in the RAI is from Attachment 6 instead of Attachment 8.

The following information is provided as a clarification to that already provided in Attachment 6:

Equipment used to perform this SR can be grouped into two categories: equipment calibrated online and equipment calibrated during refueling outages.

The following equipment used to perform this SR are calibrated online: Computer points RCF0400A, RCF0401A, RCF0402A, RCF0420A, RCF0421A, RCF0422A, RCF0440A, RCF0441A, RCF0442A, RCP0481A, FWT0418A, FWT0438A, FWT0458A, EMT0013, sensors TE-3004, TE-3005, and TE-3006, indicators FI-414, FI-415, FI-416, FI-424, FI-425, FI-426, FI-434, FI-435, FI-436, FIT-1328A, FIT-1328B, and FIT-1328C, and rack components FM-414, FM-415, FM-416, FM-424, FM-425, FM-426, FM-434, FM-435, FM-436, and PM-456.

The following equipment used to perform this SR are calibrated during refueling outages: sensors TE-411B1, TE-411D2, TE-411D3, TE-412C, TE-421D1, TE-421D2, TE-421D3, TE-422C, TE-431D1, TE-431D2, TE-432B3, TE-432D, FI-476A, FI-486A, FI-496A, FT-414, FT-415, FT-416, FT-424, FT-425, FT-426, FT-434, FT-435, FT-436, and PT-456.

Online calibrations will remain at the same frequency as currently performed. Therefore, the interval between those calibrations and performance of SR 3.4.1.4 will not be affected. As an example, blowdown indicating transmitters FIT-1328C, FIT-1328B and FIT-1328A are calibrated online, on an 18-month frequency. Currently the largest duration between those calibrations and performance of SR 3.4.1.4 is 18-months nominal. Assuming SR 3.4.1.4 is revised to a 24-month surveillance frequency, FIT-1328C, FIT-1328B and FIT-1328A will remain on an 18-

month nominal, online calibration frequency; therefore, the duration between equipment calibrations and performance of SR 3.4.1.4 will never exceed 18-months nominal. Since there is no change in the interval between calibrations and performance of this surveillance requirement, for online calibrated components, review of the historical surveillances is not required.

Instrumentation calibrated during refueling outages will remain on a refueling outage calibration schedule, which will be extended from 18-months to 24-months nominal. This will not result in an increase in duration of the interval between calibration of the equipment and performance of SR 3.4.1.4 since the SR is only performed when the plant is increasing reactor thermal power, following a refueling outage. The interval between calibration of outage related equipment and performance of SR 3.4.1.4 will not increase. As an example, pressurizer pressure transmitter PT-456 is currently calibrated at some point during each refueling outage per SR 3.3.1.10. When the plant is increasing in reactor thermal power following each refueling outage, SR 3.4.1.4 is performed; therefore, the interval between equipment calibration and performance of the SR is no greater than the duration of the refueling outage. Assuming SR 3.4.1.4 is revised to a 24-month surveillance frequency, PT-456 will still be calibrated during each refueling outage per SR 3.3.1.10 and SR 3.4.1.4 will still be performed when the plant is increasing reactor thermal power following each refueling outage; therefore, the duration between equipment calibration and performance of the SR will be no greater than the duration of the refueling outage (typically one or two months). Since there is no change in the interval between calibrations and performance of this surveillance requirement for outage related calibrated components, review of the historical surveillances is not required.

United States Nuclear Regulatory Commission
Enclosure 3 to Serial: RNP-RA/17-0068
4 Pages (including cover page)

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION REGARDING TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENT FREQUENCIES TO SUPPORT 24-MONTH FUEL CYCLES (SBPB RAI-1)

SBPB RAI – 1

(a) The LAR is proposing to change the test frequency in TS 5.5.17 "Control Room Envelope Habitability Program," item d from 18 to 24 months. However, the LAR did not propose a corresponding change in TS 5.5.17, item c.

The LAR is proposing to revise the frequency in TS 5.5.17, Item d, from 18 months to 24 months for taking measurements (e.g. Control Room envelope (CRE) pressure and Control Room emergency filtration system (CREFS) flow rate) on one of two trains of the CREFS on a staggered test basis. The two trains would then be tested on a 48 month or 4 year frequency

TS 5.5.17, Item c references Regulatory Guide (RG) 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, dated May 2003 (ADAMS Accession No. ML031490664). TS 5.5.17 Item c (ii) requires assessing CRE habitability at the frequencies specified in Sections C.1 and C.2 of RG 1.197. RG 1.197, Section C.1, states that all CREs should be tested on a performance-based periodic frequency consistent with Figure 1. RG 1.197, Figure 1, has an assessment frequency of 3 years. With the proposed change to TS 5.5.17, Item d, the two trains would then be tested on a 48 month or 4 year frequency instead of the 3 year frequency in RG 1.197.

The NRC staff requests the licensee to address this conflict in TS 5.5.17. The licensee should identify deviations taken from RG 1.197, if any, as part of its response.

SBPB RAI-1(a) Response:

RNP Technical Specifications 5.5.17 Item c (ii) requires assessing CRE Habitability at the frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197. Regulatory Guide 1.197, section C.1 states that all CRE's should be tested on a performance based periodic frequency consistent with Figure 1. Regulatory Guide 1.197 Figure 1 has an assessment frequency of 3 years following an integrated inleakage test. Figure 1 also shows that an integrated inleakage test is to be scheduled 3 years following an assessment. Following the Regulatory Guide 1.197 Figure 1 flow chart, the minimum possible years between program assessments is 6 years (with exception to the initial assessment performed 3 years after the initial baseline inleakage test).

EST-023 (RNP Control Room Emergency Ventilation System Filter and Performance Testing) is currently performed every 18 months and satisfies RNP TS 5.5.17 item d for testing adjacent area pressures to the Control Room. Note, EST-023 is NOT the integrated inleakage test required by RG 1.197. EST-023 is a test required by RNP TS 5.5.11 as a part of the Ventilation Filter Testing Program (VTFP). During the test, pressures of external areas adjacent to the Control Room envelope are measured while the system is in emergency pressurization mode after verification of proper air flow, and compared to Control Room envelope pressures. These adjacent areas to the Control Room should be at a lower pressure to ensure air is not leaking into the Control Room envelope. As stated in RNP TS 5.5.17 item d, the emergency pressurization trains are staggered. 'A' Train Control Room Emergency Filtration System is tested in EVEN number outages, and 'B' Train Control Room Emergency Filtration System is tested in ODD number outages. See section 7.4 of EST-023 for further details.

By extending the frequency of testing adjacent area pressures with each Control Room emergency pressurization train from 3 years (again, due to alternating frequency) to 4 years,

data would still be collected (for both trains) in that 6 year time frame that the program assessment is required to evaluate per RNP TS 5.5.17 item d. That data will be compared to, and trended against, historical adjacent area pressures (recorded by historical EST-023 performances) to determine if any Control Room Envelope deficiencies are apparent. Therefore, no deviations to Regulatory Guide 1.197 specified frequencies outlined in sections C.1, C.2, or Figure 1 will be taken.

SBPB RAI-1

(b) While TS 5.5.17 references RG 1.197 in TS 5.5.17, the licensee has not included RG 1.197 in Section 1.8, "Conformance to NRC Regulatory Guides," of the Robinson Updated Final Safety Analysis Report (UFSAR). Also, based on the response to part (a) of this question, the licensee may identify deviations from RG 1.197. The staff notes that this is contrary to the approach the licensee took regarding RG 1.52 "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety- Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants" Revision 2, dated March 1978 (ADAMS Accession No. ML003740139). Regarding RG 1.52, for TS 5.5.11, "Ventilation Filter Testing Program," the LAR proposes to change in filter testing frequency from 18 months to 24 months as an exception to RG 1.52. The LAR describes the exception in the proposed change to TS 5.5.11. In addition, in LAR Attachment 5, "Summary of License Commitments," the licensee made a commitment that UFSAR Section 1.8 will be modified to include the exception to RG 1.52 conformance.

Please clarify if conformance to RG 1.197, including any deviations, as applicable, will be included in Section 1.8 of the UFSAR?

SBPB RAI-1(b) Response:

RNP currently conforms to Regulatory Guide 1.197 as documented in RNP Technical Specifications 5.5.17. No deviations will be taken from the current commitments. It is noted that Reg Guide 1.197 is not currently documented in the RNP UFSAR.