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U.S. Nuclear Regulatory Commission
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Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Submittal of JPN-96-003 Attachment II Revision I; Instrumentation and Miscellaneous Systems SAFETY EVALUATION.

Reference: 1. JPN-96-003 Attachment II Revision 0; Safety Evaluation for Proposed Changes to the Technical Specifications Regarding Extension of Instrumentation and Miscellaneous Surveillance Test Intervals to Accommodate 24-Month Operating Cycles (JPTS-95-001G)

Dear Sir:

The attached document is being submitted as Attachment II Revision 1 to JPN-96-003. The changes made to JPN-96-003 Attachment II Revision 0 (Reference 1) are based on comments made by your staff during the technical review of the reference 1 document. The changes made by this revision are summarized below:

JPN-96-003 Attachment II Revision 1, Summary of Revision

Attachment II, page 25 of 52; corrected an error in the title for Table 4.2-2.; page 26 of 52 deleted the words "To resolve this discrepancy" and stated what Note 7 of page 84 of the Technical Specifications will state.

Attachment II page 17 of 52; added words describing the administrative controls used in preparing calculations for predicting instrument drift for Square Root and Summing components of the APRM flow bias loop and APRM Flow Bias Signal flow transmitters.

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Attachment II page 18 of 52; added words stating that drift data for the APRM Flow Bias flow transmitters was obtained from the transmitter vendor and the NSSS supplier. Words were also added to the paragraph which discusses calibration intervals for items 7, 10 and 13 of Table 4.1-2 to describe the administrative controls used to implement field trip setpoint changes and review those changes for safety impact.

If you have any questions, please contact Ms. C. D. Faison.

Very truly yours,

Michael J. Colomb
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MJC/AHZ/MA/mam

Attachments as stated within.

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I. DESCRIPTION OF TH : PROPOSED CHANGES

This application for amendment to the FitzPatrick Operating License proposes the following changes to the Technical Specifications: (A) extend instrumentation and miscellaneous surveillance test intervals (STI) to support 24 month operating cycles, (B) revise Technical Specification Trip Level Setpoints in support of 24 month operating cycles, and (C) incorporate miscellaneous editorial, clarification and Bases changes.

A. Changes to Extend Instrumentation and Miscellaneous Surveillance Test Intervals to Support 24-Month Operating Cycles

1. Page 5, Specification 1.0.T, Frequency column for Notation "R," Change from "At least once per 18 months (550 days)" to "At least once per 24 months (731 days)." Delete Note 1 and reference to Note 1 in the "Intervals" column, and add "Operating Cycle." Between Notations "A" and "R," add Notation "18M" with an Interval of "18 months" and frequency of "At least once per 18 months (550 days)." The applicable portion of the revised Specification reads:

"18M	18 Months	At least once per 18 months (550 days)
R	Operating Cycle	At least once per 24 months (731 days)"

2. Page 30g, Surveillance Requirement (SR) 4.1.A, change the response time testing STI for the reactor protection trip system from "at least once per 18 months" to "once per 24 months." The revised SR reads:

   "The response time of the reactor protection system trip functions listed below shall be demonstrated to be within its limit once per 24 months."

3. Page 47, Note 4 for Table 4.1-2, change "during the refueling outages" to "once per 24 months." The revised note reads:

   "Actuation of these switches by normal means will be performed once per 24 months."

4. Page 47, Note 6 for Table 4.1-2, change "once per operating cycle" to "once per 24 months." The revised note reads:

   "Sensor calibration once per 24 months. Master/slave trip unit calibration once per 6 months."

5. Page 49, SR 4.2.A, change the response time testing STI for the main steam isolation valve actuation instrumentation isolation trip functions from "at least once per 18 months" to "once per 24 months." The revised SR reads:

   "The response time of the main steam isolation valve actuation instrumentation isolation trip functions listed below shall be demonstrated to be within their limits once per 24 months."

6. Page 80, Table 4.2-2 Item 4, Auto Sequencing Timers, change the calibration frequency from "R" to "18M." This item is not extended to a 24 month STI.

7. Page 82, Table 4.2-3 Control Rod Block Instrumentation, Delete the Logic System Functional Test portion of the table.

8. Page 84, Note 7 for Tables 4.2-1 through 4.2-5, change "each operating cycle" to "per 24 months." The revised note reads:

   "Simulated automatic actuation shall be performed once per 24 months."

9. Page 84, Note 11 for Tables 4.2-1 through 4.2-5, change "operating cycle" to "24 months" and remove the reference to the built-in current source. The revised note reads:

   "Perform a calibration once per 24 months using a radiation source. Perform an instrument channel alignment once every 3 months using a current source."

10. Page 84, Note 15 for Tables 4.2-1 through 4.2-5, change "operating cycle" to "24 months." The applicable portion of the revised note reads:

    "Sensor calibration once per 24 months."

11. Page 86, Table 4.2-8 Items 1,2 and 3, denote the STI for the Instrument Functional Test and the Calibration Frequency as "18M." These items are not extended to a 24 month STI.

12. Page 112, SR 4.5.A.1.a, delete "Each operating cycle" and replace with "Refer to Table 4.2-2."

13. Page 113, SR 4.5.A.1.f, delete "Once/each operating cycle" and replace with "Refer to Table 4.2-2."

14. Page 115, SR 4.5.A.3.b, change "each operating cycle" to "per month" and add the affected valve component designations. The revised SR reads:

    "The power source disconnect and chain lock to motor operated RHR cross-tie valve (10MOV-20), and lock on manually operated gate valve (10RHR-09), shall be inspected once per month to verify that both valves are closed and locked."

15. Page 121, SR 4.5.E.1.a and SR 4.5.E.1.f, change the frequency for RCIC simulated automatic actuation (and restart) test and logic system functional test from "once/operating cycle" to "Once per 24 months."

16. Page 183, SR 4.7.B.1.f, change the Standby Gas Treatment System instrumentation calibration STI for differential pressure switches from "Once/operating cycle" to "Once per 24 months."

17. Page 185, SR 4.7.D.1.b, change the frequency for instrument line excess flow check valves testing from "At least once per operating cycle" to "Once per 24 months." The revised SR reads:

    "Once per 24 months, the instrument line excess flow check valves shall be tested for proper operation."

18. Page 222c, SR 4.9.G.2, change "At least once per operating cycle" to "Once per 24 months." The revised SR reads:

    "Once per 24 months, demonstrating the operability of over-voltage, under-voltage and under-frequency protective instrumentation by performance of a channel calibration including simulated automatic actuation of the protective relays, tripping logic and output circuit breakers and verifying the following setpoints:"

19. Page 238, SR 4.11.A.3, change the temperature transmitter and differential pressure switch calibration STI from "once/operating cycle" to "once per 24 months." The revised SR reads:

    "Temperature transmitters and differential pressure switches shall be calibrated once per 24 months."

20. Page 239, SR 4.11.B.2, change crescent area ventilation unit cooler temperature control instrument calibration STI from "once/operating cycle" to "once per 24 months." The revised SR reads:

    "Each unit cooler temperature control instrument shall be calibrated once per 24 months."

21. Page 239, SR 4.11.C.2, change battery room ventilation instrument calibration STI from "once/operating cycle" to "once per 24 months." The revised SR reads:

    "Temperature transmitters and differential pressure switches shall be calibrated once per 24 months."

22. RETS Page 32, SR 3.7.a, change "Operation of the hydrogen or oxygen monitors shall be verified in accordance with Specification 3.7.b.1,2 and 3" to "Operation of the hydrogen or oxygen monitors shall be verified in accordance with Specification 3.7.b.1 and 3.7.b.4."

23. RETS Page 33, SR 3.7.b.2, change the off-gas system instrument channel functional test STI from "once per operating cycle" to "once per 24 months" and clarify that this SR applies to the instrumentation listed in Specification 3.7.b. The revised SR reads:

    "An instrument channel functional test of the instrumentation listed in Specification 3.7.b shall be performed once per 24 months."

24. RETS Page 33, SR 3.7.b.3, change the off-gas system instrument channel calibration STI from "once per operating cycle" to "once per 24 months" and clarify that this SR applies to the instrumentation listed in Specification 3.7.b. The revised SR reads:

    "An instrument channel calibration of the instrumentation listed in Specification 3.7.b shall be performed once per 24 months."

25. RETS Page 33, add new SR 3.7.b.4 to define the calibration and functional test frequency of the off-gas hydrogen or oxygen monitors as once every 3 months. The new SR reads:

    "4. An instrument channel functional test and calibration of the offgas hydrogen or oxygen monitors shall be performed once every 3 months."

26. RETS Page 38, Table 3.10-2 Item 8, Mechanical Vacuum Pump Isolation, change Logic System Functional Test frequency from "Once per Operating Cycle" to "Once per 24 months."

27. RETS Page 38, Table 3.10-2 Item 10, Liquid Radwaste Discharge Flow Rate Measuring Devices, change Instrument Channel Calibration frequency from "Once per Operating Cycle" to "Once per 18 months." This item is not extended to a 24 month STI.

28. RETS Page 38, Table 3.10-2 Item 11, Liquid Radwaste Discharge Radioactivity Recorder, change Instrument Channel Calibration frequency from "Once per Operating Cycle" to "Once per 18 Months." This item is not extended to a 24 month STI.

29. RETS Page 38, Table 3.10-2 Item 12, Normal Service Water Effluent, delete reference to Note (f).

30. RETS Page 39, Note (f), change "each operating cycle" to "per 24 months." The revised note reads:

"Simulated automatic actuation shall be performed once per 24 months."

B. Revision to Trip Level Setpoints

1. Page 70, Table 3.2-2, Item 26, change the Trip Level Setting for the 4kV Emergency Bus Undervoltage Relay (Degraded Voltage) from "110.6 ± 1.2 secondary volts" to "110.6 ± 0.8 secondary volts."

2. Page 70, Table 3.2-2, Item 27, change the Trip Level Setting for the 4kV Emergency Bus Undervoltage Timer (Degraded Voltage LOCA) from "9.0 ±1.0 sec." to "8.96 ± 0.55 sec."

3. Page 70, Table 3.2-2, Item 28, change the Trip Level Setting for the 4kV Emergency Bus Undervoltage Timer (Degraded Voltage non-LOCA) from "45.0 ±5.0 sec." to "43.8 ± 2.8 sec."

4. Page 70, Table 3.2-2, Item 29, change the Trip Level Setting for the 4kV Emergency Bus Undervoltage Relay (Loss of Voltage) from "85 ± 4.25 secondary volts" to "85 ± 4.81 secondary volts."

5. Page 70, Table 3.2-2, Item 30, change the Trip Level Setting for the 4kV Emergency Bus Undervoltage Timer (Loss of Voltage) from "2.50 ± 0.05 sec." to "2.50 ± 0.11 sec."

6. Page 222c, SR 4.9.G.2, change the RPS MG Set Source Undervoltage setpoint from "≥108V" to "≥112.3V".

C. Editorial, Clarification and Bases Changes

1. Bases Page 37, first column second paragraph, change "each refueling outage" to "once per 24 months." The revised bases reads:

"The frequency of calibration of the APRM flow biasing network has been established as once per 24 months."

2. Bases Page 37, first column second paragraph last sentence, change "each refueling outage" to "once per 24 months." The revised bases reads:

   "Based on plant specific evaluation of drift over a 24 month operating cycle, it was determined that drift of instrumentation used in the flow biasing network is not significant. Therefore, to avoid spurious scrams, a calibration frequency of once per 24 months is established."

3. Bases Page 38, first column, second paragraph, currently discusses the response time testing interval as being based on NRC NUREG-0123, Revision 3, "Standard Technical Specifications." Since the proposed response time testing STI is extended to support 24-month operating cycles in accordance with Reference 1, this paragraph no longer applies and is deleted.

4. Page 46 and 47, Table 4.1-2, reformat table to make consistent with Amendment 227 and Standard Technical Specifications. The surveillance frequency column is revised to use the notations in Specification 1.0.T.

5. Bases page 60, second column second paragraph, delete sentences three and four and replace with the following:

   "This table only includes those isolation/transfer switches that do not have an associated control switch. Operability of isolation/transfer switches that have an associated control switch will be demonstrated when the control functions are tested as required by Surveillance Requirement 4.2.J."

6. Bases page 60a, first column first paragraph, delete "and on panels 25ASP-4, 25ASP-5, and 66HV-3B." The revised bases reads:

   "The requirements of this section apply to each remote shutdown circuit on the panels listed in Table 3.2-10."

7. Pages 77f through 77m, change table format to make consistent with Amendment 227 and Standard Technical Specifications. The surveillance frequency column will use the notations in Specification 1.0.T.

8. Revise page 77m and add new pages 77n and 77o to clarify the SR for equipment not previously identified on Table 3.2-10. Move notes on current page 77m to page 77o. Revise note on current pages 77f through 77l, and add note to current page 77m, to say "Refer to Notes on Page 77o."

9. Page 77g, Table 3.2-10 Item 16, delete "P-3" to make consistent with other Table 3.2-10 item nomenclature. The revised specification reads:

   "RHR Pump B Minimum Flow Valve Control (10MOV-16B)"

10. New page 77o, Table 3.2-10, delete Notes B,C, and D and change the designation of Note "A" to Note "1."

11. Page 77l, Table 3.2-10 Item 65, change the component designator for EDG B Emergency Bus Meter from "93VM-600-1B" to "71VM-600-1B" to correct typographical error.

12. Page 77l, Table 3.2-10 Item 65, add surveillance requirement for a monthly instrument check.

13. Page 77m, Table 3.2-10 Item 74, change the component designator for EDG D Emergency Bus Meter from "93VM-600-1D" to "71VM-600-1D" to correct typographical error.

14. Page 77m, Table 3.2-10 Item 74, add surveillance requirement for a monthly instrument check.

15. Page 82, Table 4.2-3, correct typographical error in title from "Instrumention" to "Instrumentation."

16. Page 83, Table 4.2-5, change table format to make consistent with Amendment 227 and Standard Technical Specifications (Reference 25). The surveillance frequency columns will use the notations in Specification 1.0.T.

17. Page 84a, Table 4.2-6, change table format to make consistent with Amendment 227 and Standard Technical Specifications (Reference 25). The surveillance frequency columns will use the notations in Specification 1.0.T.

18. Page 84a, Table 4.2-6, revise Note 1a to include the statement "Once per 24 months." This change provides clarification and does not revise the STI. The revised note reads:

   "a. Once per 24 months during each refueling outage, and"

19. Pages 86 and 86a, Table 4.2-8, change table format to make consistent with Amendment 227 and Standard Technical Specifications (Reference 25). The surveillance frequency column will use the notations in Specification 1.0.T.

20. Page 115, Specification 3.5.A.3.b: (1) change the component designator on the third line from "MOV20" to "10MOV-20" and, (2) change the component designator on the sixth line from "10-RHR-09" to "10RHR-09." These are editorial change to reflect standard component labeling terminology and do not change the actual valves referenced.

21. Bases page 132, first column second paragraph, change "during a refueling outage" to "once per 24 months." The revised bases reads:

    "The systems will be automatically actuated once per 24 months."

22. Bases page 226, 4.9 Bases Section G, change "once per operating cycle" to "once per 24 months." The revised bases reads:

    "Functional tests of the electrical protection assemblies are conducted at specified intervals utilizing a built-in test device and once per 24 months by performing an instrument calibration which verifies operation within the limits of Section 4.9.G."

II. PURPOSE OF THE PROPOSED CHANGES

This application for amendment to the James A. FitzPatrick Nuclear Power Plant Technical Specifications proposes to extend surveillance test intervals (STI) for instrumentation and miscellaneous systems to accommodate 24-month operating cycles. These changes will eliminate the need to shut the plant down mid-cycle to conduct these surveillances. In addition, this application proposes changes to Technical Specification Trip Level Settings for (1) the Emergency AC Bus loss of voltage and degraded voltage relays and timers, and (2) the Reactor Protection System (RPS) Normal Supply Electrical Protection Assembly (EPA) undervoltage trip. Various administrative changes that are editorial in nature are also made in this application.

Extended STIs are identified in the proposed Technical Specifications as being performed "once per 24 months" or "R." Those STIs not extended are identified as being performed "once per 18 months" or "18M." These changes follow the guidance provided by Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate 24-Month Fuel Cycle," (Reference 1).

III. TECHNICAL BASIS FOR THE PROPOSED CHANGES TO INSTRUMENTATION FUNCTIONAL TEST AND CALIBRATION FREQUENCY

The instrument calibration extension program involves plant specific drift evaluations, loop accuracy/setpoint calculations, and system evaluations. These calculations and evaluations provide the technical basis for extending instrument calibration intervals to support a 24-month operating cycle.

The Authority's 24-month operating cycle program, including drift analysis, setpoint calculation and drift monitoring, was discussed at a February 23, 1993 meeting with NRC Staff members (Reference 2). The methodology presented below is the same as was used by the Authority in justifying instrument calibration extensions for the Indian Point 3 (IP3) Plant. This represents a generic approach in addressing calibration extension issues and, as such, is applicable to the FitzPatrick Plant.

NRC Generic Letter 91-04 (Reference 1), Enclosure 2 provides guidance on the type of analysis and information required to justify a change to instrument calibration intervals. The approach taken in evaluating 24-month calibration extensions at the FitzPatrick Plant meets the requirements of this enclosure. Seven specific actions were delineated and are repeated below with the Authority's response. This discussion provides insight to the methodology used by the Authority in evaluating the effects of an increased STI on instrument drift. The effects of an increased STI on specific instrumentation are discussed in Section IV of this safety evaluation.

From Generic Letter 91-04, Enclosure 2:

1. *Confirm that instrument drift as determined by as-found and as-left calibration data from surveillance and maintenance records has not, except on rare occasions, exceeded acceptable limits for a calibration interval.*

2. *Confirm that the values of drift for each instrument type (make, model, and range) and application have been determined with a high probability and a high degree of confidence. Provide a summary of the methodology and assumptions used to determine the rate of instrument drift with time based upon historical plant calibration data.*

3. *Confirm that the magnitude of instrument drift has been determined with a high probability and a high degree of confidence for a bounding calibration interval of 30 months for each instrument type (make, model number and range) and application that performs a safety function. Provide a list of the channels by TS section that identifies these instrument application.*

Instrument Drift Evaluations (IDEs) were developed to address issues 1, 2, and 3. The IDEs document past performance and calculations to statistically extrapolate the effect of the longer calibration interval on instrument drift.

Historical calibration data for components currently calibrated once per 18 months was evaluated to assess the acceptability of extending the calibration interval to 24 months (+25% for a maximum of 30 months). In general, the IDEs are comprised of two phases. Phase 1 compares past instrument performance to theoretical acceptance limits (Vendor Drift Allowance (VDA) or Calibration Tolerance (CT)). Phase 2 predicts future drift by statistically extrapolating derived drift data to predict maximum expected drift over a 30 month interval (MED30).

The historical calibration data is the absolute value of the difference between the "as-found" and previous "as-left" calibration values. In addition to instrument drift, this data reflects instrument reference accuracy, measuring and test equipment uncertainties, and the effects of ambient environmental conditions (temperature, pressure, humidity, and radiation). Therefore, the term "drift" as used throughout the IDE actually represents total instrument calibration uncertainties.

Calibration data is collected and categorized by component type (instruments having the same manufacturer, model number, calibration span, and application) for analysis. The tabulated drift values are then compared to theoretical acceptance limits (VDA or CT). If the derived drift data falls within these limits at least 80% of the time, past performance is considered acceptable (i.e. failures are considered a "rare occurrence"). Deviations from this criteria are evaluated on a case-by-case basis.

Phase 2 of the IDE predicts future instrument performance over a maximum 30 month period using Phase 1 data. Field drift data is analyzed, using the square root of the sum of the squares technique, to arrive at a value normalized to a 30 month interval. A value of MED30 is statistically derived from normalized field drift data. The MED30 value bounds hardware performance with a 95% probability at a 95% confidence level (i.e. there is a 95% probability that 95% of all past, present and future calibration results will be less than the maximum expected drift).

The MED30 value is then compared to the vendor drift allowance extrapolated to a 30 month time period (VDA30), or CT if vendor performance limits are not available. If MED30 is within VDA30 or CT, further analysis is not performed and the instrument is acceptable for extension to a 24 month STI. If MED30 exceeds VDA30 or CT, then further analysis is performed and loop accuracy and setpoint calculations are updated to include MED30.

The IDEs associated with this Technical Specification amendment are references for this submittal and are included as Attachments. A more detailed description of the IDE methodology is contained in these references.

From Generic Letter 91-04, Enclosure 2:

4. *Confirm that a comparison of the projected instrument drift errors has been made with the values of drift used in the setpoint analysis. If this results in revised setpoints to accommodate larger drift errors, provide proposed TS changes to update trip setpoints. If the drift errors result in revised safety analysis to support existing setpoints, provide a summary of the updated analysis conclusions to confirm that safety limits and safety analysis assumptions are not exceeded.*

5. *Confirm that the projected instrument errors caused by drift are acceptable for control of plant parameters to effect a safe shutdown with associated instrumentation.*

6. *Confirm that all conditions and assumptions of the setpoint and safety analysis have been checked and are appropriately reflected in the acceptance criteria of plant surveillance procedures for channel checks, channel functional tests and channel calibrations.*

The Authority has evaluated the effects of an increased calibration interval on instrument errors to confirm that drift will not exceed the conditions and assumptions of the setpoint and safety analysis.

Loop accuracy calculations were performed to determine total channel uncertainties by accounting for instrument inaccuracies. The methodology used is consistent with the methods described in ISA-RP-67.04 (Reference 3). Loop accuracy calculations for instrument channels generally use the most conservative choice between the vendor specified uncertainties and MED30. If MED30 is unreliable because too few data points were used for its estimation, the vendor specified uncertainty values are used. Loop accuracy/setpoint calculations are required to show that sufficient margin exists between the analytical limit and the existing field trip setting to confirm that the safety analysis and safety limit assumptions are not exceeded. The calculations verify that Technical Specification limits provide sufficient margin over the analytical limit to allow for instrument inaccuracies.

If the loop/setpoint calculation shows that sufficient margin exists so that the assumptions of the safety analysis are not violated, reasonable assurance exists that the calibration interval may be safely extended. If the loop accuracy/setpoint calculation shows that insufficient margin exists, considering 30 month drift uncertainties, one of the following actions is taken: (1) the calibration interval is not extended, (2) new field trip setpoints are calculated and the setpoint is revised to ensure sufficient margin exists, or (3) analysis is performed to establish new Technical Specification Trip Level Settings that will ensure that safety actions are initiated consistent with the assumptions of the safety analysis.

Instrumentation requiring field trip setpoint changes are identified in Section IV.A and Table 1, List of Commitments. The safety implications of the Technical Specification Trip Level Setting changes are discussed in Section IV.B of this safety evaluation. All required instrument setpoint changes will be completed prior to implementing the 24-month surveillance test interval (STI).

Each instrument loop considered for extension to a 24-month STI is evaluated in a "System Report." The System Report brings together the results of the IDE, loop accuracy/setpoint calculations, and surveillance history, and evaluates the results to determine if instrument drift resulting from the longer STI will result in exceeding safety limits or invalidating safety analysis assumptions. The System Report identifies the Technical Specification, procedure or field setpoint changes required for implementation of a 24-month STI. The applicable System Reports are references for this submittal and are included as Attachments.

From Generic Letter 91-04, Enclosure 2:

7. *Provide a summary description of the program for monitoring and assessing the effects of increased calibration surveillance intervals on instrument drift and its effect on safety.*

The evaluation process described above identifies the expected instrument drift for a 30-month calibration interval (MED30). Calculations have factored this drift into the selection of the nominal trip setpoints and Allowable Values (AV), as well as for the selection of As-Found acceptance criteria for calibration procedures. The Surveillance Testing Program requires that completed surveillance tests receive management review to ensure acceptance criteria is met, and a Deficiency Event Report (DER) be initiated for any instrument discovered to have exceeded its "as-found" tolerance. This process results in notification of plant management and evaluation of out of tolerance instruments to determine the cause. This evaluation will identify problems that develop as a result of the extended calibration interval.

The present process has set limits on instrument drift expected to occur during the increased calibration interval. The Surveillance Testing Program provides sufficient administrative controls to ensure that instrumentation experiencing excessive drift due to the longer calibration interval is identified and evaluated, and appropriate corrective action taken.

To ensure that the effects of instrument drift are properly evaluated, the Surveillance Testing Program will be enhanced to provide additional guidance for detecting additional and unexplained drift that can be attributed to the longer calibration interval. If additional drift is verified, appropriate corrective actions will be taken to correct this condition. The Surveillance Testing Program changes will be completed prior to implementation of the 24-month STI extensions.

IV. SAFETY IMPLICATION OF THE PROPOSED CHANGES

This section evaluates the impact of the proposed changes on plant safety. The evaluation is divided into three groups of changes: (A) extension of instrumentation and miscellaneous STIs to support 24-month operating cycles, (B) changes to Technical Specification Trip Level Settings, and (C) miscellaneous editorial, clarification and Bases changes. The heading for each specific Surveillance Requirement (SR) discussion contains an item number in parentheses. This number cross-references the item number in Section I, "Description of the Proposed Changes" for which the discussion applies.

A. Changes to Extend Instrumentation and Miscellaneous Surveillance Test Intervals to Support 24-Month Operating Cycles

1. Specification 1.0.T (Change I.A.1)

This specification defines the surveillance frequency notations/intervals used in the Technical Specifications. The definitions were added in Amendment 227 to permit the use of notations for surveillance test intervals on the instrument tables, and to relate all surveillance intervals to a consistent and precise time period. The note in Section 1.0.T clarifies "once per operating cycle," and similar phrases, by relating the interval to the definition of the frequency notation "R." The following changes are proposed to this specification:

- The notation "R" is defined as "Operating Cycle" with a frequency of "At least once per 24 months (731 days)."
- A new notation, "18M," is defined as "18 Months" with a frequency of "At least once per 18 months (550 days)."
- Note 1 to the specification is deleted.

All STI changes on the Technical Specification Volume 1A Instrumentation Tables are made using the notations contained in this specification. All instrumentation currently having an "R" surveillance frequency notation in the instrumentation tables are evaluated for extension to the 24-month STI in the following sections of this safety evaluation. Those items that can be extended to a 24-month STI will remain with an "R" notation. Those items that can not be extended are denoted with an "18M."

Note 1 to this specification is deleted because the changes proposed in this submittal, and past 24-month operating cycle STI extension submittals, have removed phrases such as "once each operating cycle," "once per operating cycle," "each refueling outage," "at least during each operating cycle," and "once each operating cycle not to exceed 18 months." These phrases have been replaced with phrases that specify the required time intervals such as "once per 24 months" and "once per 18 months." These changes eliminate the need for the clarification provided in Note 1.

This proposed change has no impact on plant safety because it is an administrative change to the method by which STIs are presented in the Technical Specifications. Changes to specific STIs are evaluated separately in the following discussions.

2. Reactor Protection System (RPS) Instrumentation

The RPS provides protection against the onset and consequences of conditions that threaten the integrity of the fuel cladding and reactor coolant pressure boundary. The RPS limits the uncontrolled release of radioactive material from the fuel and the reactor coolant pressure boundary by terminating excessive temperature and pressure increases through the initiation of an automatic scram.

The RPS has two independent trip systems (A and B) each normally powered from an AC motor generator set, through redundant electrical protection assemblies (EPAs). The EPAs protect system components from damage due to sustained undervoltage (UV), overvoltage (OV) or underfrequency (UF) conditions. RPS trip systems A and B have two automatic scram trip channels (A1,A2 & B1,B2 respectively) and one manual trip channel (A3 & B3 respectively). The outputs of the scram trip channels are arranged in a logic so that the trip of any channel will trip the associated trip system. Tripping of both systems will initiate a reactor scram (one of two taken twice logic).

Functional diversity is provided by monitoring a wide range of dependent and independent parameters. The RPS will initiate a scram on the following conditions:

- High neutron flux
- Reactor coolant system high pressure
- Reactor vessel low water level
- Turbine stop valve closure
- Turbine control valve fast closure
- Scram discharge instrument volume high water level
- High drywell pressure
- Main steam line isolation
- Manual scram
- Reactor mode switch in "Shutdown"

These trip functions provide rapid reduction of reactivity by insertion of all control rods into the core.

The RPS system uses instrumentation that is highly reliable and meets safety-related design criteria. The system has redundant and independent channels which provide a means to verify proper instrumentation performance during operation. The RPS has sufficient redundancy to ensure a high confidence in system performance even with the failure of a single component. The RPS is designed to be tested during normal plant operations. Testing consists of channel checks, instrument functional tests and instrument channel calibrations. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications. These surveillances provide assurance that the instrument channels are functioning properly.

NRC Bulletin 90-01, Supplement 1(Reference 4) established criteria for monitoring of certain model Rosemount transmitters considered susceptible to failures due to loss of fill oil. All Rosemount devices used in the RPS are exempt from additional sensor monitoring requirements based on the criteria established in Reference 4. Therefore, the loss of fill oil concern does not preclude extension of RPS transmitter calibrations to support a 24-month operating cycle.

Based on the redundant and highly reliable design of the RPS, and on-line testing that will identify degrading or failed equipment, the Authority has concluded that the impact on system reliability is small, if any, as a result of these calibration interval extensions. This conclusion is verified by the analysis of past and predicted performance discussed below. Extension of RPS surveillance test intervals was evaluated in Reference 5. Evaluation of past and future drift for RPS instrumentation is contained in Reference 6.

RPS Instrument Response Time Testing - SR 4.1.A (Change I.A.2)

This SR currently requires that the response time of the RPS trip functions listed in Specification 4.1.A be demonstrated at least once per 18 months. This testing verifies that RPS trip functions are completed within the time limits assumed in the accident and transient analyses. Each test consists of one instrument channel in each trip system, with all instrument channels in both trip systems being tested within two test intervals. In terms of the transient and accident analyses, the individual parameter response time interval begins when the monitored parameter exceeds the trip setpoint at the channel sensor and ends when the scram pilot valve solenoids are de-energized.

This SR can be extended to support a 24-month STI because of the redundant design of the RPS and adequate on-line testing to detect failures that could affect RPS response times. This conclusion is supported by a review of past surveillance test results that indicates all required acceptance criteria have consistently been met.

Table 4.1-1 - Reactor Protection System (Scram) Instrumentation Test Requirements

Item 1 Mode Switch in Shutdown Functional Test (Change 1.A.1)

The reactor mode switch is a multi-position keylock switch provided to actuate or bypass the various scram functions appropriate to the particular plant operating mode. Placing the switch in "Shutdown" enforces a reactor shutdown with all control rods inserted condition by inserting a reactor scram input into the RPS. The scram signal is removed after a 10 second time delay, permitting the scram to be reset and the Control Rod Drive Hydraulic system to be restored to a normal lineup. This testing demonstrates the ability of the reactor mode switch to cause a reactor scram when the switch is placed in "Shutdown" and demonstrates that the time delay for the reset relays is ≥ 10 seconds. The change in the STI from 18 to 24 months is made by revision of the Specification 1.0.T definition of "R."

The scram inserted by the mode switch in "shutdown" position is not considered a protective function because it is not required to protect the fuel or the reactor coolant pressure boundary, and it bears no relationship to minimizing the release of radioactive material from any barrier. The reactor mode switch is a General Electric (GE) Type SB-9 switch designed for highly repetitive use. In the event of an undetected mode switch failure, the RPS will continue to provide automatic and manual scram capability. Based on this discussion, the once per operating cycle mode switch in shutdown functional test can be safely extended to support a 24-month STI. A review of surveillance test history supports this conclusion.

Table 4.1-2 - Reactor Protection System (Scram) Instrument Calibration Minimum Calibration Frequencies For Reactor Protection Instrument Channels (Change 1.A.1, 1.A.3, 1.A.4)

Item 3 Flow Bias Signal
Item 5 High Reactor Pressure
Item 6 High Drywell Pressure
Item 7 Reactor Low Water Level
Item 8 High Water Level in the SDIV (Group A)
Item 10 MSIV Valve Closure
Item 11 Turbine First Stage Pressure Permissive
Item 12 Turbine Control Valve Fast Closure Oil Pressure Trip
Item 13 Turbine Stop Valve Closure

Note 4 Actuation of Switch By Normal Means for Items 10 & 13
Note 6 Sensor Calibration Note for Items 5,6,7 & 11

This table currently requires a once per operating cycle calibration for the above listed RPS System instrument channels to ensure that the instruments are properly calibrated and actuation takes place at previously evaluated setpoints. The change to the STI is made by revising the Specification 1.0.T definition of "R," and revising Note 4 (for Items 10 and 13) and Note 6 (for Items 5, 6, 7 and 11) of Table 4.1-2 on page 47 of the Technical Specifications.

The review of past performance for Items 5,6,7,8,11,12 and 13 confirmed that past drift values were within the specified calibration tolerances, except on rare occasions. Therefore, this instrumentation has an acceptable past performance record as defined by Generic Letter 91-04.

Past drift for the APRM Flow Bias Signal (Item 3) flow transmitters (Manufactured by Barton and Foxboro) routinely exceeded the specified calibration tolerance. As a result, they were replaced in 1993 with Rosemount transmitters. Square Root and Summing components of the APRM flow bias loop were found out of procedural tolerance in the past due to tight CT. New calibration tolerances have been calculated based on past performance and should bound future drift. These calculations were performed in accordance with NYPA's Design Control Manual (DCM). The DCM's are the procedures currently used by NYPA to implement the requiements of 10CFR50 Appendix B as they apply to design control.

A review of past performance of the MSIV Limit Switches (Item 10) shows that these switches were within the specified CT, except on rare occasions. Therefore, the switches have an acceptable past performance record as defined by Generic Letter 91-04. These limit switches have experienced problems during plant operation primarily due to failure of the switches to reset, and slow resets during the periodic MSIV limit switch instrument functional test. The majority of the limit switch failures were related to reset of the switches, rather than instrument drift. The failure to reset problem has been addressed by installation of modified actuating levers during the Reload 11/Cycle 12 Refueling Outage.

Projected values of future drift were incorporated into loop accuracy calculations for Items 5,6,8,11, and 12. The calculations determined that sufficient margin exists between the field trip settings and the analytical limit when the 30 month drift uncertainties are considered. For the APRM flow bias signal transmitters (Item 3), the projected drift of the new Rosemount transmitters is significantly less than the old transmitters evaluated in the drift analysis using past drift data. The projected drift of the new Rosemount transmitters was calculated using drift data supplied by the transmitter vendor and JAF's NSSS supplier. These calculations were performed in accordance with NYPA's Design Control Manual. Therefore, it is acceptable to extend the calibration interval for these instruments to support a 24 month operating cycle.

Extension of the calibration intervals for Items 7, 10 and 13 requires changes to the field trip setpoints to ensure that Technical Specification limits will not be exceeded due to drift over the longer STI. Changes to the Technical Specification trip level setting listed on Table 3.1-1 are not required to support these field setpoint changes. The field trip setpoint changes will be completed prior to implementation of the 24 month STI. Field trip setpoint changes are implemented via revisions to controlled plant procedures. All revisions to controlled plant procedures recieve a documented safety review as defined in NYPA's Modification Control Manual and JAF's Administrative Procedures. The purpose of this safety review is to determine if a Nuclear Safety Evaluation is required in accordance with 10CFR50.59.

Reactor Protection System EPA Channel Calibration - SR 4.9.G.2 (Change A.1.18)

This SR currently requires a once per operating cycle calibration of the overvoltage (OV), undervoltage (UV) and underfrequency (UF) protective instrumentation. This includes simulated automatic actuation of relays, logic and output breakers.

Analysis of historical surveillance data confirmed that past drift values were within required calibration tolerance, except on rare occasions. Therefore, the EPAs have an acceptable past performance record as defined by Generic Letter 91-04.

Calculations, using projected values of future drift, determined that existing trip settings for the Normal and Alternate EPA UF and OV trips, and the Alternate EPA undervoltage trips, are adequate to accommodate drift and uncertainties associated with a bounding 30 month calibration interval. Therefore, extension of these items to support a 24-month STI is acceptable.

Extension of the calibration interval for the Normal and Alternate EPA time delays is acceptable provided that changes are made to the field trip setpoints. These setpoint changes will ensure that sufficient margin is available to accommodate the projected drift and uncertainties associated with a 30 month calibration interval. Changes to the setpoints stated in Technical Specification 4.9.G.2 are not required to support these field setpoint changes. The field trip setpoint changes will be completed prior to implementation of the 24-month STI.

The loop accuracy calculations determined that extension of the calibration interval for the Normal EPA UV trip setpoints is acceptable provided that changes are made to the field trip setpoint and the Technical Specification Setpoint identified in Specification 4.9.G.2. The changes to the Technical Specification Setpoint are evaluated in Section IV.B of this safety evaluation. Extension of the calibration interval for the Normal EPA UV trip to support a 24-month STI is acceptable provided that these setpoint changes are implemented. The setpoint change will be completed prior to implementation of the 24 month STI.

3. Primary Containment Isolation System (PCIS) Instrumentation

The PCIS initiates isolation of the primary containment if monitored plant parameters approach limits assumed in the plant safety analyses. This function is necessary to prevent or limit the release of radioactivity in the event of a loss of coolant accident (LOCA) or reactor coolant pressure boundary leak.

The PCIS uses instrumentation that is highly reliable and meets safety-related design criteria. The system has redundant and independent channels which provide a means to verify proper instrumentation performance during operation. The PCIS has sufficient redundancy to ensure a high confidence in system performance even with the failure of a single component. The PCIS is designed to be tested during normal plant operations. On-line testing consists of channel checks, functional tests, master/slave trip unit calibrations and logic system functional tests. For the Main Steam Line High Radiation instrumentation, an instrument channel calibration is performed quarterly using a current source. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications. These on-line surveillances provide assurance that the instrument channels and trip systems are functioning properly.

NRC Bulletin 90-01, Supplement 1 (Reference 4) established criteria for monitoring of certain model Rosemount transmitters considered susceptible to failures due to loss of fill oil. The Rosemount devices used for the reactor vessel level, main steam line flow, main steam line pressure, and the HPCI and RCIC steam line isolation functions require additional monitoring based on the criteria established in Reference 4. The enhanced monitoring program, described in the Authority's response to Bulletin 90-01 Supplement 1 (Reference 7), consists of a daily operational instrument check, weekly operational verification check, response time testing and once per

operating cycle drift monitoring. The once per operating cycle drift monitoring interval for this program was chosen to avoid the risks associated with performing on-line calibrations of this instrumentation. During power operations, hydraulic transients in the instrument sensing lines, coupled together by common piping, are known to cause safety function actuations or trips when instruments are valved in and out of service at operating pressure. Calibration of these instruments at power exposes the plant to a possible transient that could challenge safety systems. Therefore, the once per operating cycle drift monitoring performed as a part of the enhanced monitoring program will be performed on a nominal 24-month interval (+25% for a maximum of 30 months).

Based on the redundant and highly reliable design of the PCIS, and on-line testing that will identify degrading or failed equipment, the Authority has concluded that the impact on system reliability is small, if any, as a result of these calibration interval extensions. This conclusion is verified by the analysis of past and predicted performance discussed below. Extension of PCIS surveillance test intervals was evaluated in Reference 8. Evaluation of past and future drift for PCIS instrumentation is contained in Reference 9.

PCIS Instrument Response Time Testing - SR 4.2.A (Change 1.A.5)

This SR currently requires that response times of the Main Steam Isolation Valve (MSIV) actuation trip functions listed in SR 4.2.A be demonstrated within specified limits once per 18 months. This verifies that trip functions are completed within the time limits assumed in the accident and transient analyses. Each test consists of one instrument channel in each trip system, with all instrument channels in both trip systems tested within two test intervals. The response time interval begins when the monitored parameter exceeds the trip setpoint at the channel sensor and ends when the MSIV pilot solenoid relay contacts open.

The safety analyses assume MSIV closure in $\leq$10.5 seconds for both off-site dose calculations and analysis of a main steam line break outside of containment. The Technical Specifications require an MSIV closure time of not less than 3 seconds or not greater than 5 seconds. The instrument response times for the reactor low level and low steam line pressure instrumentation is $\leq$1.0 second, and for high steam line flow is $\leq$2.5 seconds. Total closure time is a combination of the instrument response time and the Technical Specification MSIV closure time. Combining these values (worst case would be 7.5 seconds) shows that there is margin available to accommodate potentially slower instrument response times due to drift without presenting a safety concern.

This SR can be extended to support a 24-month operating cycle because of the redundant design of the PCIS, adequate on-line testing to detect failures that could affect PCIS response times, available margin to accommodate potentially slower response times, and a monitoring program in place to detect failures of these transmitters due to loss of fill oil. This conclusion is supported by a review of past surveillance results which indicates that all required acceptance criteria have consistently been met.

Table 4.2-1 - PCIS Instrumentation Test and Calibration Requirements (Changes 1.A.1, 1.A.9, 1.A.10)

Item 2 Reactor Low-Low-Low Water Level
Item 3 Main Steam Line Tunnel High Temperature
Item 4 Main Steam Line High Flow
Item 5 Main Steam Line Low Pressure
Item 7 Condenser Low Vacuum
Item 8 Main Steam Line Tunnel High Radiation
Item 9 HPCI & RCIC Steam Line High Flow
Item 10 HPCI & RCIC Steam Line/Area High Temp
Item 11 HPCI & RCIC Steam Line Low Pressure

This table currently requires a once per operating cycle sensor calibration of the above listed PCIS System trip functions to ensure that the instruments are properly calibrated and actuation takes place at previously evaluated setpoints. The change to the STI is made by revising the Specification 1.0.T definition of "R," and revising Notes 11 and 15 on page 84 of the Technical Specifications. The Note 11 reference to the built-in current source is deleted. An external current source is used to obtain required "as-found" and "as-left" calibration data.

Analysis of historical surveillance data confirmed that past drift values for all devices associated with these line items were within specified tolerances, except on rare occasions. Therefore, this instrumentation has an acceptable past performance record as defined by Generic Letter 91-04.

Projected values of future drift are incorporated into loop accuracy calculations for each listed PCIS trip function. The calculations determined that the calibration intervals for Items 2,3,4,8,10, 11 and the RCIC Steam Line High Flow portion of item 9 can be extended to a 24-month STI because sufficient margin exists between the field trip setpoint and the analytical limit considering 30 month drift uncertainties. Therefore, extension of the calibration intervals for these items to support a 24-month operating cycle is acceptable.

Extension of the calibration interval for Items 5, 7 and the HPCI Steam Line High Flow portion of Item 9 requires a change to the field trip setpoints to ensure that the analytical limit is not exceeded due to drift over the longer calibration interval. Changes to the Technical Specification trip level settings listed in Table 3.2-1 are not required to support these field setting changes. The field trip setpoint changes will be completed prior to implementation of the 24-month STI.

Table 4.2-1 - PCIS Simulated Automatic Actuation Requirements (Change 1.A.8)

Item 1	**Main Steam Line Isolation Valves, Main Steam Line Drain Valves, and Reactor Water Sample Valves**
Item 2	**RHR - Isolation Valve Control and Shutdown Cooling Valves**
Item 3	**Reactor Water Cleanup Isolation**
Item 4	**Drywell Isolation Valves, TIP Withdrawal, and Atmospheric Control Valves**
Item 5	**SGT System and Reactor Building Isolation**
Item 6	**HPCI Subsystem Auto Isolation**
Item 7	**RCIC Subsystem Auto Isolation**

Table 4.2-1 defines the Logic System Functional Test (LSFT) and Simulated Automatic Actuation (SAA) requirements for the PCIS system. The LSFT frequencies are not revised by this proposed amendment and remain at a six month frequency. The change to the SAA test interval is made by revision of Note 7 on page 84 of the Technical Specifications.

The SAA testing confirms the ability of the PCIS to perform its intended function by confirming proper operation of electrical and mechanical components. The mechanical components in the system are highly reliable and have low service requirements. These components are operated during normal plant operations and are tested periodically in accordance with the ASME Section XI Inservice Testing (IST) Program. Initiating and actuation logic are subjected to periodic channel checks, functional tests, and LSFTs. This on-line testing is adequate to verify proper system response and identify degrading or failed equipment. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications.

The STI for SAA testing of the PCIS system may be extended based on the high reliability of system components, the redundant design of the PCIS and existing on-line testing. A review of historical surveillance data supports this conclusion.

4. Core and Containment Cooling Instrumentation

The instrumentation evaluated in this section consists of those that initiate and control the Emergency Core Cooling Systems (ECCS), containment cooling systems and the Reactor Core Isolation Cooling (RCIC) system.

The ECCS, in conjunction with other systems and structures, limits the release of radioactive materials to the environs following a postulated loss of coolant accident (LOCA) so that resulting radiation exposures are kept within the guideline values given in 10 CFR 100. This objective is primarily achieved by maintaining core inventory to prevent fuel damage. The ECCS consists of the following:

- High Pressure Coolant Injection (HPCI) System
- Automatic Depressurization System (ADS)
- Core Spray System
- Low Pressure Coolant Injection (LPCI) mode of the Residual Heat Removal (RHR) system

The systems are designed to limit fuel clad temperature over the complete spectrum of possible break sizes in the Reactor Coolant Pressure Boundary, including the design basis break.

The Containment Cooling mode of the RHR system removes heat energy from the Primary Containment in the event of a LOCA. Each subsystem of the containment cooling mode of the RHR system consists of two RHR pumps, two RHR Service Water pumps, one RHR Heat Exchanger and a flowpath capable of recirculating water from the suppression pool through the heat exchanger and back to primary containment.

The RCIC system provides makeup water to the reactor vessel for periods when the normal heat sink is unavailable. The RCIC system also provides makeup water to the reactor vessel during a total loss of alternating current (AC) electrical power (Station Blackout).

Instrumentation used in the Core and Containment Cooling Systems is highly reliable. This instrumentation has redundant and independent channels which provide a means to verify proper instrument performance during operation. The ECCS instrumentation is designed with sufficient redundancy to ensure a high confidence of ECCS performance even with a single failure. On-line testing of these instruments includes channel checks, functional tests and master/slave trip unit calibrations. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications. The on-line surveillances provide assurance that the instrument channels are functioning properly.

NRC Bulletin 90-01, Supplement 1 (Reference 4) established criteria for monitoring of certain model Rosemount transmitters considered susceptible to failures due to loss of fill oil. All Rosemount devices used in the core and containment cooling systems, with the exception of HPCI and RCIC steam line flow transmitters, are exempt from additional sensor monitoring requirements based on the criteria established in Reference 4. These steam line flow transmitters are associated with the isolation of the steam line and are discussed in the evaluation of PCIS instrumentation. Therefore, the loss of fill oil concern does not preclude extension of the core and containment cooling system transmitter calibrations to support a 24-month operating cycle.

Based on the redundant and highly reliable design of the Core and Containment Cooling Systems, and on-line testing that will identify degrading or failed equipment, the Authority has concluded that the impact on system reliability is small, if any, as a result of these calibration interval extensions. This conclusion is verified by the analysis of past and predicted performance discussed below. Extension of core and containment cooling system STIs was evaluated in Reference 10 and 11. Evaluation of past and future drift for this instrumentation is contained in Reference 12

Table 4.2-2 - Core and Containment Cooling System Instrumentation Test and Calibration Requirements (Changes 1.A.1, 1.A.6 and 1.A.10)

Item 1	**Reactor Water Level**
Item 2b	**Drywell Pressure (ATTS)**
Item 3b	**Reactor Pressure (ATTS)**
Item 4	**Auto Sequencing Timers**
Item 9	**4kV Emergency Bus Under-Voltage Relays & Timers**
Item 10	**LPCI Cross Connect Valve Position**

This table currently requires a once per operating cycle calibration of items 1, 2b, 3b, 4 and 9, and an instrument functional test for Items 9 and 10, to ensure the instruments are properly calibrated and actuation takes place at previously evaluated setpoints. The calibration interval for Item 4 is not extended at this time because sufficient data is not available to properly evaluate the effects of the longer STI on instrument drift. Calibration of these timers on an 18-month STI is not necessary to support a 24-month operating cycle because the testing can be done with the plant on-line. Therefore, the calibration frequency will be designated as "18M." The change to the STI for the remainder of the items is made by revising the Specification 1.0.T definition of "R," and revising Note 15 (for Items 1, 2b and 3b) on page 84 of the Technical Specifications.

The instrument functional test for the LPCI cross-connect valve position indication channel (Item 10) demonstrates that an annunciator alarms when either the LPCI cross-connect valve control room panel keylock switch is in the "Open" position or the LPCI cross-connect valve is not full closed. Review of historical data shows that there have been no recorded failures of this function during testing or operations. These devices are extremely reliable and do not exhibit time dependent performance failures. The valve is verified locked closed on a monthly basis. Therefore, the safety function is verified more often than the STI and extension of this test interval to accommodate a 24-month operating cycle is acceptable.

Analysis of historical surveillance data for Items 1, 2b, 3b, and 9 confirmed that past drift values for these devices were within the specified tolerances, except on rare occasions. Therefore, this instrumentation has an acceptable past performance record as defined by Generic Letter 91-04. A review of the 4kV emergency bus undervoltage and degraded voltage relays and timers functional test reveals that all required acceptance criteria have consistently been met.

Predicted values of future drift were incorporated into loop accuracy calculations for Items 1, 2b, 3b and 9. The calculations determined that the STI for Items 1, 2b and 3b can be extended to support a 24-month operating cycle because sufficient margin currently exists between the field trip setpoint and the analytical limit considering 30 month drift uncertainties.

The STI for the instrument functional test and calibration of the 4kV emergency bus undervoltage relays and timers (Item 9) can be extended to support a 24-month operating cycle provided that changes are made to the field trip settings and the Technical Specification Trip Level Settings listed on Table 3.2-2. These changes will ensure that safety limits are not exceeded for the duration of the longer operating cycle. The field trip settings will be changed prior to 24-month STI implementation. The basis for the changes in the Trip Level Settings of Table 3.2-2 is discussed in Section IV.B of this safety evaluation.

Table 4.2-2 - Core and Containment Cooling System Instrumentation Test and Calibration Requirements (Change 1.A.6)

Item 1	**Core Spray Subsystem**
Item 2	**Low Pressure Coolant Injection Subsystem**
Item 4	**HPCI Subsystem**
Item 5	**ADS Subsystem**

Section 4.5 - Core and Containment Cooling Systems Surveillance Requirements (Changes 1.A.12 and 1.A.13)

4.5.A.1.a Core Spray Simulated Automatic Actuation Test
4.5.A.1.f Core Spray LSFT
4.5.A.3 LPCI Simulated Automatic Actuation Test and LSFT
4.5.C.1 HPCI Simulated Automatic Actuation Test and LSFT

Table 4.2-2 defines the Logic System Functional Test (LSFT) and Simulated Automatic Actuation (SAA) requirements for ECCS logic. The SAA and LSFT requirements of Items 1,2 and 4 are duplicated in Section 4.5.A.1, 4.5.A.3 and 4.5.C.1 of the Technical Specifications. However, for the LSFT requirements, the surveillance frequency listed in Section 4.5 is once per operating cycle while the frequency listed in Table 4.2-2 is once per six months. The proper LSFT interval of once per six months is not revised by this proposed amendment. The LSFT and SAA frequencies listed in Section 4.5 will be revised to reference the Surveillance Requirement in Table 4.2-2. The change to the STI is made by revision of Note 7 on page 84 of Technical Specifications which will state:

"Simulated automatic actuation shall be performed once per 24 months."

Simulated Automatic Actuation testing confirms the ability of the ECCS to perform its intended function by confirming proper operation of electrical and mechanical components. Mechanical components of the system (pumps and valves) are tested periodically on-line in accordance with the ASME Section XI Inservice Testing (IST) Program. ECCS initiation and actuation logic is subjected to periodic on-line channel checks, functional tests, and LSFTs. These on-line tests are sufficient to identify degrading or failed equipment. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications.

It is acceptable to extend the SAA testing interval for these systems based on high reliability of system components, the redundant design of the ECCS and existing on-line testing. A review of historical surveillance data supports this conclusion.

4.5.E.1.a RCIC Simulated Automatic Actuation Test (Change 1.A.15)
4.5.E.1.f RCIC LSFT (Change 1.A.15)

SR 4.5.E.1.a and 4.5.E.1.f define the LSFT and Simulated Automatic Actuation (SAA) requirements for the RCIC system. The change to the STI is made by revision of the frequency from "Once/operating cycle" to "Once per 24 months."

The SAA testing confirms the ability of RCIC to perform its intended function by confirming proper operation of electrical and mechanical components. The LSFT confirms that components are operable per the design intent by testing of relays and contacts of a logic circuit from sensor to actuated device. Mechanical components of the RCIC system are tested periodically on-line in a manner similar to ASME Section XI Inservice Testing (IST) program testing of ECCS systems. RCIC system initiation and actuation instrumentation is subjected to periodic on-line channel checks and functional tests. These on-line tests are sufficient to identify degrading or failed equipment. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications.

It is acceptable to extend the STI for RCIC system LSFT and SAA testing based on the high reliability of system components and existing on-line testing. A review of historical surveillance data supports this conclusion.

5. Control Rod Block Instrumentation Test and Calibration Requirements

Table 4.2-3 - Control Rod Block System Logic Check and Simulated Automatic Actuation Requirement (Change 1.A.7)

Table 4.2-3 currently requires a once per six month LSFT and once per operating cycle SAA testing for the control rod block instrumentation. This amendment proposes to eliminate the LSFT and SAA testing requirements because more frequent channel functional testing and calibration adequately test the control rod block circuitry.

The control rod block functions are provided to ensure fuel design limits are not exceeded for postulated transients or accidents. The control rod block logic is arranged as two similar logic circuits that are energized when control rod movement is allowed. Each logic circuit receives input signals from the neutron monitoring system, reactor protection system, refueling interlocks, and the reactor recirculation system. A rod block signal is generated, and control rod withdrawal is inhibited, when one of the logic circuits is deenergized. Therefore, the trip logic is arranged in a 1 out of n configuration (e.g., any trip on one of the input signals will result in a rod block).

As defined in the Technical Specifications, SAA testing means applying a simulated signal to the sensor to actuate the circuit in question. This type of testing demonstrates that a logic circuit can perform its design function by applying simulated signals to the minimum number of sensors required to initiate the primary function of the logic system. Even though the SAA does not demonstrate that all contacts and coils in a system are operable, it does demonstrate that the minimum number of coils and contacts required to achieve the system function are operational. The LSFT is a test of relays and contacts of a logic circuit from sensor to actuated device to ensure components are operable per design intent. This testing demonstrates the ability of the subject system and components to respond to initiations, actuations, and interlocks per design intent.

Table 4.2-3 instrumentation is subjected to channel functional tests, calibrations, and instrument checks. The channel functional test verifies proper instrument channel response, alarm and initiating actions. The calibration adjusts the instrument signal output so that it corresponds, within acceptable range and accuracy, to a known value of the parameter which the instrument monitors. Calibration encompasses the entire instrument channel including actuation, alarm or trip. The instrument check qualitatively determines operability by observation of instrument behavior during operation. This determination includes, where possible, comparison of the instrument with other independent instruments measuring the same variable.

The channel functional tests and calibrations adequately test the control rod block functions. Because the control rod block logic is arranged in a "1 of n" configuration, a rod block signal is generated each time a channel functional test or calibration is performed. Therefore, these tests are equivalent to a simulated automatic actuation because the testing actuates the control rod block circuitry. This adequately demonstrates the control rod block circuit design function. In addition, because the circuit is a "1 of n" configuration, the functional testing and calibrations satisfy the requirements of an LSFT.

In consideration of the above, the Authority proposes deletion of the SAA and LSFT requirements in Table 4.2-3. This deletion will also make the periodic test requirements for the control rod block instrumentation consistent with BWR Standard Technical Specifications (References 24 and 25). Prior to implementation of this amendment, the Authority will conduct a review of surveillance testing procedures to verify that testing performed on the control rod block logic is consistent with the requirements stated in the Standard Technical Specifications.

6. ATWS Recirculation Pump Trip Instrumentation

Table 4.2-7 - ATWS Recirculation Pump Trip Instrumentation Test and Calibration Requirements (Change 1.A.1)

Item 1 Reactor Pressure-High
Item 2 Reactor Water Level-Low Low

This table currently specifies once per operating cycle channel calibration, SAA and LSFT of the Anticipated Transient Without Scram (ATWS) instrumentation. The change to the STI is made by revision of the Specification 1.0.T definition of "R." Extension of these STIs was evaluated in References 10 and 11. Evaluation of past and future drift is contained in Reference 12.

The ATWS recirculation pump trip circuitry limits the consequences of an ATWS event by tripping the recirculation pumps to reduce core flow and thereby reducing core power generation. The instrumentation used is highly reliable and independent from the reactor protection system. On-line testing consists of channel checks, channel functional tests and transmitter and trip unit calibrations. Gross instrument failures are detected by alarms and by comparison with redundant and independent indications. Therefore, the Authority has concluded that the impact on system reliability is small, if any, as a result of extension of the instrument calibration interval. This conclusion is verified by the analysis of past and predicted future performance discussed below.

NRC Bulletin 90-01, Supplement 1(Reference 4) established criteria for monitoring of certain model Rosemount transmitters considered susceptible to failures due to loss of fill oil. All Rosemount devices used for the ATWS function are exempt from additional sensor monitoring requirements based on the criteria established in Reference 4. Therefore, the loss of fill oil concern does not preclude extension of ATWS transmitter calibrations to support a 24-month STI.

The LSFT and SAA testing can be extended to a 24-month STI because the instrumentation used is highly reliable and independent, and there is sufficient on-line testing to verify operability of the system. A review of past surveillance test results supports this conclusion.

Analysis of historical calibration data confirmed that past drift values for these instruments were within specified tolerances, except on rare occasions. Therefore, the ATWS instrumentation has an acceptable past performance record as defined by Generic Letter 91-04. Predicted values of future drift were incorporated into loop accuracy calculations for each listed circuit. The calculations determined that the ATWS instrument calibrations can be extended to a 24-month STI because sufficient margin exists between the field trip setpoint and the analytical limit.

7. Accident Monitoring Instrumentation

Table 4.2-8 - Minimum Test and Calibration Frequency for Accident Monitoring Instrumentation (Change 1.A.1 and 1.A.11)

Item 1	**Stack High Range Effluent Monitor**
Item 2	**Turbine Building Vent High Range Effluent Monitor**
Item 3	**Radwaste Building Vent High Range Effluent Monitor**
Item 4	**Containment High Range Radiation Monitor**
Item 5	**Narrow Range Drywell Pressure**
Item 6	**Wide Range Drywell Pressure**
Item 7	**Drywell Temperature**
Item 8	**Wide Range Torus Water Level**
Item 9	**Torus Bulk Water Temperature**
Item 10	**Torus Pressure**
Item 12	**Reactor Vessel Pressure**
Item 13	**Fuel Zone Reactor Water Level**
Item 14	**Wide Range Reactor Water Level**
Item 15	**Core Spray Flow**
Item 16	**Core Spray Discharge Pressure**
Item 17	**LPCI (RHR) Flow**
Item 18	**RHR Service Water Flow**
Item 20	**Narrow Range Torus Water Level**
Item 21	**Drywell-Torus Differential Pressure**

This table currently requires a once per operating cycle calibration for all of the above listed instruments and a once per operating cycle instrument functional test for Items 1, 2, 3 and 4. The calibration and functional test STI for Items 1,2 and 3 is not extended at this time because past performance does not justify the STI extension. Functional testing and calibration of these items on an 18 month frequency does not impact implementation of the 24-month operating cycle because the testing can be done with the plant on-line. The Instrument Functional Test and Calibration STI for Items 1,2 and 3 will be denoted as "18M" on Table 4.2-8. The changes to the STI for the remainder of the items is made by revising the Specification 1.0.T definition of "R."

The instrumentation listed in Table 4.2-8 provides reliable information to plant operators to monitor transient plant behavior and to verify proper safety system performance following an accident. The instrumentation conforms with the acceptance criteria of NUREG-0737, NUREG-0578, and Generic Letter 83-36 and includes Regulatory Guide 1.97 Type A variables. Extension of these surveillance test intervals was addressed in References 8, 10, 14, and 15. Evaluation of past and predicted drift of this instrumentation was evaluated in References 9, 12, and 16.

On-line testing for these instruments includes periodic instrument checks. In addition, by comparing a reading of each channel to the reading of redundant or related instruments, a nearly continuous surveillance of instrument performance is available.

Item 4 requires a once per operating cycle instrument functional test and calibration of the containment high range radiation monitors. The containment high range radiation monitors consist of two physically separated, redundant radiation detectors that provide information on the extent of core damage following an accident. The monitors also provide isolation signals to the PCIS to shut the Drywell and Torus vent and purge valves on high drywell radiation. Analysis of historical surveillance data confirmed that past drift values for the containment high range radiation monitors were within the specified tolerances, except on rare occasions. Therefore, these monitors have an acceptable past performance record as defined by Generic Letter 91-04. Postulated values of future drift were incorporated into loop accuracy calculations for these monitors. The calculations determined that sufficient margin exists between the field trip setpoint and the analytical limit when the 30 month drift uncertainties are considered, provided that the field trip setpoint is changed. Changes to the Technical Specification trip setting is not required to support this change. The field trip setting will be changed prior to implementation of a 24-month STI.

Analysis of historical surveillance data for the remainder of the above listed items confirmed that past drift values for all these devices were within the specified tolerances, except on rare occasions. Therefore, this instrumentation has an acceptable past performance record as defined by Generic Letter 91-04.

Predicted values of future drift were incorporated into loop accuracy calculations for each listed circuit. The calculations determined that these items can be extended to a 24-month STI because the increase in channel uncertainty due to drift from the longer operating cycle is minimal, and considered to be negligible.

8. Remote Shutdown Instrumentation

Remote Shutdown Capability Instrumentation and Controls (Change 1.A.1)

Table 3.2-10	**Note C**	**Instrument Calibration for Each Required Instrument Channel**
	Note D	**Demonstrate Control Circuit and Transfer Switches Function**

This table currently requires a once per operating cycle calibration of all required instrument channels, and demonstration that each required control circuit and transfer/isolation switch is capable of performing its intended function. Operability of components, such as pumps and valves, that are controlled from these panels is covered by other specifications. The format of this table has been changed to make it consistent with Technical Specification Amendment 227 and BWR Standard Technical Specifications (Reference 25). These changes are discussed in Section IV.C of this safety evaluation. Changes to the STI is made by revising the Specification 1.0.T definition of "R." Extension of these surveillance test intervals was addressed in References 13 and 15. Evaluation of past and future drift for the instrumentation was evaluated in Reference 16.

Remote shutdown capability is provided by the Remote Shutdown Panel (25RSP) and five Alternate Shutdown Panels (25ASP-1,2,3,4 & 5), in conjunction with the ADS Relief Valve Control Panel, the EDG Control Panels, the Reactor Building Ventilation and Cooling Control Panel, and Instrument Racks 25-6 and 25-51. This capability ensures that sufficient instrumentation and controls are available to place and maintain the plant in a safe shutdown condition should the control room become uninhabitable.

Analysis of historical surveillance data for the remote shutdown instrumentation confirmed that past drift values for all these devices were within the specified tolerances, except on rare occasions. Therefore, this instrumentation has an acceptable past performance record as defined by Generic Letter 91-04. Predicted values of future drift for these instruments were incorporated into loop accuracy calculations to ensure that sufficient margin exists between the field trip setpoint and the analytical limit, when 30 month drift uncertainties are considered. The results support the calibration interval extension for a majority of the components, while postulated drift for the balance of the instruments can be accommodated for by minor procedural changes in calibration tolerance. Therefore, the instrument calibrations can be extended to a 24-month STI.

A review of past performance of the control circuit and transfer switch functional tests show no test failures. Therefore, extension of the STI for the control circuit and transfer switch functional test can be extended to support a 24-month operating cycle.

9. <u>Miscellaneous Instrumentation Calibrations and Functional Tests</u>

Standby Gas Treatment (SGT) System Differential Pressure Switch Calibration - SR 4.7.B.1.f (Change 1.A.16)

This SR currently requires calibration of the SGT system differential pressure switches once per operating cycle. Extension of the calibration intervals for the above listed instruments is evaluated in Reference 13. Evaluation of past and future drift for the above instruments is contained in Reference 17.

The SGT system maintains the secondary containment at a negative pressure with respect to the environment to control reactor building leakage and provide filtration for removal of particulates and iodines prior to release from the main stack. The system consists of two redundant full capacity air filtration trains that ensure availability of the system in the event of a failure that disables one filter train. The system is normally in a standby condition, therefore gross plugging or fouling of the filters is minimized. Individual filter differential pressures are monitored during periods of system operation. The function of these differential pressure switches is to monitor the SGT filter train for mechanical failure or filter blockage, and provide annunciation in the Control Room of this condition.

Based on the redundant design of the SGT system, the normal standby condition of the system, and monitoring of filter differential pressures during periods of system operation, the Authority has concluded that the impact on system reliability is small, if any, as a result of this change.

Analysis of past instrument performance confirmed that drift values for these devices have been within the specified tolerances, except on rare occasions. Predicted values of future drift were incorporated into loop accuracy calculations for these circuits. The calculations determined that sufficient margin exists between the field trip setpoint and the analytical limit when the 30 month drift uncertainties are considered. Therefore, the calibration interval for the SGT differential pressure instrumentation can be extended to 24-months.

SR 4.11.A.3 Control Room Ventilation Temperature Transmitter and Differential Pressure Switch Calibrations (Change 1.A.19)

The Control Room is served by two full capacity redundant units which consist of air handling units, recirculation exhaust fans, special filter trains and emergency control room supply fans. This system is completely independent from other plant heating, ventilating, and air conditioning systems, which ensures operation during normal, shutdown, and design basis accident modes. Instrumentation is provided to monitor the status of the system, control area temperatures, and start redundant units in the event of an equipment failure.

The Control Room emergency ventilation system consists of two filter trains, each consisting of a pre-filter, High Efficiency Particulate Air (HEPA) filter, two charcoal filters in series and a second HEPA filter. The filter trains are 100% capacity redundant units designed to supply up to 1000 cfm of clean filtered outside air for breathing and maintain a positive pressure in the control room. This system is manually initiated during a design basis accident, if radiological conditions warrant.

This SR currently requires calibration of the temperature transmitters and differential pressure indicating switches (DPIS) once per operating cycle. Extension of the calibration intervals was evaluated in Reference 18. Evaluation of past and future drift for the above instruments is contained in Reference 19.

A review of drift data for DPIS switches and temperature transmitters indicates that drift values were within the required calibration tolerance, except on rare occasions. Therefore, the instrumentation has an acceptable past performance record as defined in Generic Letter 91-04. Review of past drift data for the normal ventilation supply and exhaust fan DP switches indicates that the drift values exceeded specified calibration tolerance on more than rare occasions. As a result, they have been replaced with newer model switches. Past drift for the temperature indicating controllers has exceeded the CT on more than rare occasions with four out of the five failures occurring in 1988 or before. Past drift for the emergency trains differential pressure switches has exceeded the CT on more than rare occasions. All these failures were minimally above CT and did not jeopardize the switch design function. New calibration tolerances have been calculated for these instruments based on past performance to bound future drift.

Predicted values of future drift were incorporated into loop accuracy calculations for these instruments. New calibration tolerance bands for the DPS, DPIS and certain temperature instrumentation were calculated based on past instrument performance. No field setpoint changes are required as a result of the newly calculated CTs. The calculations determined that future drift over the longer STI is predicted to remain within the existing or revised calibration tolerance.

The calibration STI for this instrumentation may be extended to 24 months because the redundancy of the system provides assurance that the system will be operable in all required modes. The results of the IDE for these instruments support the extension for a majority of the components, while predicted drift for the balance of the instruments can be accommodated for by minor procedural changes in calibration tolerance. In all cases the field trip settings are not affected.

SR 4.11.B.2 Crescent Area Unit Cooler Temperature Control Instrumentation Calibrations (Change 1.A.20)

The Reactor Building crescent area houses the ECCS and other safeguards equipment and associated auxiliaries. The crescent area unit coolers maintain temperatures within design limits of the safeguards equipment to ensure continued operability of this equipment during and following a design basis accident. Eight of the ten unit coolers are equipped with a temperature switch that starts the associated unit cooler fan when temperature reaches a predetermined setpoint. The remaining two unit coolers are equipped with temperature indicating controllers that modulate the cooling water supply to each of the coolers while the associated fans run continuously.

This SR currently requires calibration of this instrumentation once per operating cycle. Extension of the STI was evaluated in Reference 18. Evaluation of past and future drift for the above instruments is contained in Reference 19.

A review of drift data for the fan control temperature switches and the temperature indicating controllers indicates that drift values were within the required calibration tolerance, except on rare occasions. Therefore, the instrumentation has an acceptable past performance record as defined in Generic Letter 91-04.

Predicted values of future drift for these instruments were incorporated into loop accuracy calculations to ensure that sufficient margin exists between the field setpoint and the analytical limit considering 30 month drift uncertainties. The results support the extension of the calibration interval for the temperature control instrumentation.

SR 4.11.C.2 Battery Room Ventilation Temperature Transmitter and Differential Pressure Switch Calibrations (Change 1.A.21)

The battery room ventilation system provides ventilation and maintains station battery room temperatures within design limits. The system is independent of other plant ventilation systems which ensures operation of the system during normal, shutdown and accident conditions. Each of the two battery rooms is supplied by a full capacity system that includes one air handling unit (AHU), two exhaust fans and one recirculation fan. These units are manually started. Temperature control is provided by modulating the recirculation dampers and heating coil controls in response to a thermostat. Alarms are provided in the Control Room to indicate equipment malfunctions.

This SR currently requires calibration of this instrumentation once per operating cycle. Extension of the calibration intervals was evaluated in Reference 18. Evaluation of past and future drift for the above instruments is contained in Reference 19.

A review of past drift data for the temperature control instrumentation indicates that drift values were within the required calibration tolerance, except on rare occasions. The temperature transmitters and switches experienced failures that exceeded the CT in May, 1994. When this instrumentation was recalibrated in 1995, the results were well within the CT. Therefore, the problem experienced with the temperature instrumentation is considered a rare occurrence and this instrumentation has an acceptable past performance record as defined in Generic Letter 91-04.

A review of past drift data for the differential pressure switches indicates that drift has exceeded the CT on more than rare occasions. These failures were on the AHU and recirculation fan switches, which provide annunciation only and do not perform a safety-related function, and the exhaust fan switches which provide an automatic start for the exhaust fans. New CT's have been calculated for these instruments based on past performance to bound future drift.

Predicted values of future drift for these instruments were incorporated into loop accuracy calculations to ensure that sufficient margin exists between the field trip setpoint and the analytical limit, when 30 month drift uncertainties are considered. The results support the extension for a majority of the components, while predicted drift for the balance of the instruments can be accommodated for by minor procedural changes in calibration tolerance. In all cases the field trip settings are not affected.

RETS SR 3.7.a, 3.7.b.2 and 3.7.b.3 **Off-Gas System Explosive Gas Instrumentation Channel Functional Test and Instrument Calibrations (Changes 1.A.22, 1.A.23, 1.A.24, 1.A.25)**

This SR currently requires calibration and functional testing of the Off-gas (OFG) treatment system instrumentation once per operating cycle. This instrumentation consists of the OFG dilution steam flow, recombiner inlet/outlet temperature, and recombiner hydrogen indication instruments. Extension of the calibration intervals was evaluated in Reference 18. Evaluation of past and future drift for the above instruments is contained in Reference 19.

The OFG system processes, holds and controls the main condenser off-gases to ensure that gases released from the main stack to the environment are below regulatory limits. To ensure that the concentration of explosive gases remains below design limits, the system continuously recombines the hydrogen (H_2) and oxygen (O_2) to form steam. Prior to recombination, the gas mixture is diluted with steam to reduce the H_2 concentration to <4% by volume. This dilution ensures that the gas mixture is maintained below the flammable concentration for hydrogen. The recombiner system also reduces the volume of offgas to ensure adequate holdup time for the decay of short-lived radioactive isotopes of noble gas and iodine.

The primary method of ensuring that the hydrogen concentration is within acceptable limits is direct monitoring of this parameter. This monitoring is provided by redundant hydrogen analyzers. If continuous monitoring is not available, alternate monitoring methods use the dilution steam flow and recombiner inlet/outlet temperature instruments. When H_2 monitoring is not available, Radiological Effluent Technical Specification (RETS) 3.7.c requires weekly verification of H_2 content less than or equal to 4% by volume.

Operation of the explosive gas mixture instruments is verified by a daily instrument check and once per operating cycle channel calibration and functional tests. Calibration of the H_2 analyzer is performed quarterly in accordance with the vendors recommendations. This is more frequent than is required by RETS.

A review of past drift data for the steam flow and recombiner temperature instruments indicates that drift values were within the required calibration tolerance, except on rare occasions. Therefore, the instrumentation has an acceptable past performance record as defined in Generic Letter 91-04.

Past drift for the hydrogen analyzers has exceeded the CT on more than rare occasions. Review of H_2 analyzer performance shows that the STI can not be extended for these instruments. The manufacturer recommends that these units be calibrated once per quarter. New RETS SR 3.7.b.4 is being added to require calibration of these instruments once per quarter. Changing the STI to once per quarter will not affect the ability to operate the plant on a 24-month operating cycle because the calibration can be performed with the plant on-line.

Predicted values of future drift for the dilution steam flow and recombiner temperature instruments were incorporated into loop accuracy calculations to ensure that sufficient margin exists between the field setpoint and the analytical limit considering 30 month drift uncertainties. The results support the extension of the calibration interval for these instruments.

Technical Specification SR 3.7.b.2 and SR 3.7.b.3 apply to the dilution steam flow and recombiner temperature instrumentation and are revised to an STI of 24 months. New SR 3.7.b.4 applies to calibration of the H_2 analyzers and will require an STI of once per quarter.

Calibration Frequency for Radiation Monitoring Systems (Changes 1.A.27 and 1.A.28)

RETS Table 3.10-2	**Item 10**	**Liquid Radwaste Discharge Flow Rate Measuring Devices Instrument Channel Calibration**
	Item 11	**Liquid Radwaste Discharge Radioactivity Recorder Instrument Channel Calibration**

This table currently requires a once per operating cycle calibration for the above listed instrument channels. The STI for Item 10 is not extended at this time because past performance does not justify extension. The instrument channel calibration interval for Item 11 is not extended because insufficient data is available to justify the extension. The STI for Items 10 and 11 will be denoted as "Once per 18 Months." This does not affect the ability to operate the plant on a 24-month operating cycle because the testing can be performed with the plant on-line. These STI changes were evaluated in Reference 14.

The STI for these items remains at once per 18 months. The changes in notation from "Once per Operating Cycle" to "Once per 18 Months" clarify the testing requirements, and therefore are administrative in nature and have no safety implications.

RETS Simulated Automatic Actuation and LSFT Requirements (Changes 1.A.26, 1.A.29 and 1.A.30)

Table 3.10-2	**Item 3**	**Reactor Building Area Exhaust Monitors, Recorders and Isolation Simulated Automatic Actuation (Note f)**
	Item 6	**SJAE Radiation Monitors/Offgas Line Isolation Simulated Automatic Aply to the dilut}**
	Item 8	**Mechanical Vacuum Pump Isolation Simulated Automatic Actuation (Note f) and LSFT**
	Item 9	**Liquid Radwaste Discharge Monitor/Isolation Simulated Automatic Actuation (Note f)**
	Item 12	**Normal Service Water Effluent (Note f)**
	Item 13	**SBGTS Actuation (Note f)**

Table 3.10-2 defines the LSFT and SAA requirements for the radiation monitoring system. The LSFT STI for Items 3, 6, 9 and 13 are not revised by this proposed amendment and remain at six months. The LSFT frequency for Item 8 is changed from "Once per Operating Cycle" to "Once per 24 Months" by revision of the Table 3.10-2 notation. The change to the SAA surveillance test interval is made by revision of Note f on page 39 of the RETS. The SAA requirement denoted for Item 12 by Note f is deleted. These changes were evaluated in References 8, 14, 18 and 20.

The SAA testing of the reactor building area exhaust monitor isolation (Item 3) demonstrates the ability of the logic systems to isolate reactor building ventilation, shut primary containment vent and purge, atmosphere control, sampling and pressure sensing isolation valves, and initiate the SGT system upon receipt of a trip signal from the reactor building ventilation exhaust radiation monitors. These monitors provide a trip signal if one monitor senses radiation levels exceeding the high-high trip setpoint, or if both monitors have a downscale trip. This instrumentation is subjected to periodic on-line functional testing, channel calibration and instrument checks that will identify degraded or failed equipment. The surveillance test and work history review reveals no failures that prevented isolation of the above systems, or initiation of the SGT system in response to a high radiation condition.

Simulated automatic actuation testing of the off-gas line isolation (Item 6) demonstrates the ability of the off-gas system to automatically isolate on a simulated high radiation condition. The OFG isolation logic is subjected to periodic on-line functional testing to verify proper response and identify degrading or failed equipment. A review of surveillance test and work history revealed no failures of the OFG system that would prevent isolation in response to a high radiation condition.

The SAA testing of the mechanical vacuum pump isolation (Item 8) demonstrates that the condenser air removal pump will trip and isolate in response to a main steam line high radiation signal. The LSFT confirms that components are operable per the design intent by testing of relays and contacts of the logic circuit from sensor to actuated device. The condenser air removal pumps are normally shutdown and isolated except during plant startup. On-line testing consists of periodic testing of pump and valve operability and functional tests of the instrument channels that initiate isolation. This testing provides assurance that malfunctions of the pumps, valves and instrument channels will be detected. A review of surveillance test and work history revealed no failures that would prevent this isolation in response to a high radiation condition.

The SAA testing of the liquid radwaste discharge radiation monitors (Item 9) demonstrates that a high-high trip of the monitors will result in closure of the liquid radwaste discharge valves. On-line testing consists of trip setpoint calibration of the monitor and calibration of the monitor using a known source at the detector. Review of historical surveillance data shows no failures to meet acceptance criteria and no corrective actions required for operability.

SAA testing of the SGT system (Item 13) ensures, in conjunction with other system tests, that the system is capable of performing its design safety function. System instrumentation is periodically tested on-line. System motor operated valves are cycled and the fans are started periodically to verify operability. The SGT system has redundant filter trains and is normally in the standby condition. Therefore, extension of this STI to 24 months is acceptable. Review of historical surveillance data supports this conclusion.

Based on periodic on-line testing and review of surveillance history, it is acceptable to extend the simulated automatic actuation STI for the above systems (Items 3, 6, 8, 9 and 13), and the LSFT STI for Item 8, to support 24-month operating cycles.

This amendment proposes to delete the SAA testing requirement for the Normal Service Water Effluent instrument channel (Item 12). This monitor provides indication of the normal service water effluent radioactivity level, and annunciation if this level exceeds preset limits. The monitor has no isolation function. A quarterly instrument channel functional test and calibration is performed that verifies the indication and alarm functions. During calibration, a source check is performed to ensure that the detector responds properly to a known source of radioactivity. This combination of testing meets the intent of the SAA testing, which is to actuate the circuit in question by applying a simulated signal to the sensor. Therefore, the once per operating cycle SAA testing requirement for this instrumentation is redundant to testing performed on a quarterly basis. Deleting the SAA requirement for the Normal Service Water Effluent Monitor is acceptable because this instrument loop has no isolation function, and is adequately tested during the quarterly instrument channel functional tests and calibrations.

10. Non-Instrumentation Related 24-Month Operating Cycle Changes

SR 4.5.A.3.b Verification of RHR Cross-Tie Valves Closed and Locked (Change 1.A.14)

This SR verifies that the RHR cross-tie manual valve (10RHR-09) and motor operated valve (10MOV-20) are locked closed and power is removed from the MOV operator once per operating cycle. Maintaining these valves closed ensures that each LPCI subsystem remains independent and a failure of the flowpath in one subsystem will not affect the flowpath in the other.

Valve 10MOV-20 is disabled in the closed position with electrical leads disconnected, the breaker in the off-position, and thermal overloads removed. In addition, the operator is chain locked to prevent manual operation. Valve 10RHR-09 is closed with a locking device positioned so that the valve can not be opened without removing the locking device. The MOV is equipped with an annunciator which alarms in the Control Room when the valve is not in the fully closed position.

The cross-tie valves are verified locked closed once every month, and prior to startup. The frequency of the LPCI cross-tie verification as listed in the BWR Standard Technical Specifications (Reference 25) is once per 31 days. This change proposes that the STI for SR 4.5.A.3.b be reduced to once per month to make it consistent with actual plant practice and Reference 25.

SR 4.7.D.1.b Instrument Line Excess Flow Check Valve Testing (Change 1.A.17)

This SR currently requires that the instrument line excess flow check valves be tested for proper operation once per operating cycle. Extension of this item was evaluated in Reference 13.

The Primary Containment is penetrated by small diameter instrument lines that are connected to the reactor coolant system and dead ended at instruments located in the Reactor Building. Each of these lines contain a 0.25 inch restricting orifice located inside primary containment, a manual valve, and an excess flow check valve located outside primary containment. The excess flow check valve minimizes the leakage into the secondary containment in the event of a break in the instrument line downstream of the valve. The 0.25 inch orifice will reduce the blowdown due to a break in the instrument line and a failure of the excess flow check valve to a rate that will not result in secondary containment overpressurization. Therefore , the consequence of an excess flow check valve failure following an instrument line break is minimal.

A review of surveillance test data from 1988 to the present shows a failure rate of approximately two percent. Therefore, based on design redundancy and past performance, it is concluded that instrument line excess flow check valve testing can be extended to a 24-month STI.

B. **Changes to Technical Specification Trip Level Settings**

1. Changes to the Trip Level Settings of 4kV Emergency Bus Undervoltage and Degraded Voltage Relays and Timers (Changes 1.B.1 through 1.B.5)

A calculation (Reference 21) was performed to determine the total channel uncertainties associated with the 4kV Emergency Bus undervoltage trip system relays and time delays over a 24-month operating cycle. Based on results of this calculation, the following changes to the Table 3.2-2 Trip Level Settings are required:

Table 3.2-2 Item	Present TS Trip Level Setting	Proposed TS Trip Level Setting
Item 26-Degraded Voltage relay	110.6 ± 1.2 secondary volts	110.6 ± 0.8 secondary volts
Item 27-Degraded Voltage Timer (LOCA)	9.0 ± 1.0 seconds	8.96 ± 0.55 seconds
Item 28- Degraded Voltage Timer (Non-LOCA)	45 ± 5.0 seconds	43.8 ± 2.8 seconds
Item 29-Loss of Voltage Relay	85 ± 4.25 secondary volts	85 ± 4.81 secondary volts
Item 30-Loss of Voltage Timer	2.50 ± 0.05 seconds	2.50 ± 0.11 seconds

These changes are necessary for the Authority to implement a 24-month STI. The new Trip Level Settings were calculated using the methodology of ISA-RP-67.04, Part II (Reference 3). The calculation (Reference 21) supporting these changes is included as an Attachment to this submittal.

The Emergency Bus Undervoltage Trip System transfers the 4kV emergency electrical buses to the Emergency Diesel Generators (EDGs) in the event that an undervoltage condition is detected. The system has two levels of protection: (1) degraded voltage protection, and (2) loss of voltage protection. Degraded voltage protection prevents a sustained low voltage condition from damaging safety-related equipment. The degraded voltage protection has two time delays. A short time delay coincident with a LOCA, and a longer time delay with no LOCA signal present, to prevent unnecessary starting of the EDGs during normal plant evolutions which may cause transient degraded voltage conditions. The loss of voltage protection prevents a more severe voltage drop from causing a long-term interruption of power. Time delays are included in the system to prevent inadvertent transfers due to spurious voltage decreases. Therefore, both the duration and severity of the voltage drop are sensed by the Emergency Bus Undervoltage Trip System.

The degraded voltage protection trip level setting is presently at 110.6 secondary volts (approximately 93% of 4,160 volts on the bus) with a 9.0 second time delay if coincident with a LOCA, and a 45 second time delay for non-LOCA conditions. This trip provides protection for safety-related loads from thermal damage, or tripping of protective devices, due to degraded voltage conditions. Previous analysis has shown that the 600 V bus must be maintained at 90% of nominal at the load center bus to ensure proper operation of safety-related 600V loads, Motor Control Center (MCC) control circuits and control circuits fed from 120V AC buses. To maintain 90% nominal voltage at the 600V bus, a minimum of 92% nominal is required at the 4,160V bus. The setting of 93% of nominal takes into account instrument inaccuracies. The proposed change tightens the tolerance for the degraded voltage setpoint based on the actual drift history of the relays.

The degraded voltage protection time delay settings are designed to allow for recovery of bus voltage due to momentary voltage dips caused by starting of large motors during normal operation, the transfer of loads during startup and sequential starting of ECCS pump motors during accident conditions. The time delays ensure that the maximum time delays assumed in the accident analyses are not exceeded, while providing protection for safety-related loads in the event of a degraded voltage condition. The proposed changes revise the settings of both degraded voltage time delay relays to account for instrument inaccuracies, and tighten the setpoint tolerances based on predicted future drift of the relays.

The 4kV emergency bus undervoltage trip level setting is presently 85 secondary volts (approximately 71.5% of 4,160 volts on the bus) with a 2.5 second time delay. The voltage setting is high enough to allow for proper operation and protection from damage to 4kV safety-related motors, and is low enough to prevent a trip due to a momentary voltage drop caused by normal starting of any motor in the plant. The 2.5 second time delay is long enough to assure proper coordination with protective devices, yet short enough to be less than the maximum time delay assumed in the FSAR analysis. The proposed changes expand the tolerance for these setpoints to accommodate drift predicted for the longer STI.

The proposed Trip Level Setting changes for the 4kV undervoltage and degraded voltage protection relays and timers are adequate to ensure that the emergency AC electrical system performs as assumed in the transient and accident analysis. These changes are necessary to accommodate instrument drift predicted for the duration of a 24-month operating cycle. The field trip setpoints will be revised consistent with these proposed Trip Level Settings prior to implementation of a 24-month STI.

2. Changes to the RPS Normal Supply EPA Undervoltage Trip Setting in SR 4.9.G.2 (Change 1.B.6)

A calculation (Reference 22) was performed to determine the total channel uncertainties associated with the Normal RPS EPA trip setpoints over a 24-month operating cycle. This calculation also considered the results of a voltage drop evaluation performed on the RPS system (Reference 23). Based on the results of this calculation, the RPS MG Set Source Undervoltage (UV) setpoint specified in SR 4.9.G.2 requires revision from its present value of ≥ 108V to ≥ 112.3V. The field trip setpoint for the Normal RPS EPA UV trip has been raised to address the issue of voltage drop, however, the setpoint specified in SR 4.9.G.2 requires revision to correct the present Technical Specification limit. The new setpoint was calculated using the methodology of ISA-RP-67.04, Part II (Reference 3). The referenced calculations are included as an Attachment to this submittal.

The Reference 23 evaluation analyzed the impact of the voltage drop from the EPAs to the scram pilot valve solenoids and other relays, based on actual voltage measurements taken at RPS System loads. The evaluation concluded that the RPS scram pilot valve solenoids are the components that require the highest minimum voltage to ensure proper operation. Due to the location of the Normal supply EPAs (Turbine Building Electric Bays), the feeder cable run between the supply and the RPS distribution panels (located in the Relay Room) results in a significant voltage drop that affects the final RPS load voltages. The voltage drop between the Alternate supply EPA's and the RPS distribution panels, both located in the Relay Room, is acceptable due to the short cable length between them.

Evaluation has determined that the minimum UV trip values to assure the Normal supply EPAs provide 90% nominal voltage protection at the scram pilot valve solenoids are 111.4 and 112.3 volts for the "A" and "B" side EPAs respectively. The proposed SR 4.9.G.2 RPS MG Set Source UV setpoint is ≥112.3V, which is the most conservative value of the two.

The proposed Normal Supply EPA UV Setpoint ensures adequate protection for the RPS, and other essential components, from undervoltage conditions on the RPS power supplies. These changes are necessary to accommodate instrument drift predicted for the duration of a 24-month operating cycle, and correct the Technical Specification setpoint that did not adequately consider the effects of voltage drop on all RPS system components. The field trip setpoints will be revised prior to implementing the 24 month STI.

C. **Editorial, Clarification and Bases Changes**

1. Changes to the Instrumentation Tables to Make Consistent With Amendment 227 and BWR Standard Technical Specifications (Changes 1.C.4, 1.C.7, 1.C.15, 1.C.16, 1.C.17, 1.C.18, 1.C.19 and 1.C.20)

Technical Specification Tables 4.1-2, 3.2-10, 4.2-5, 4.2-6 and 4.2-8 are revised to make the format consistent with the changes made in Amendment 227 and the BWR Standard Technical Specifications. The frequency notations designated in Specification 1.0.T are substituted for the present requirement stated in the table (e.g., an item with a frequency of "Daily" is changed to state the frequency as "D"). The changes do not revise any STI currently denoted in the tables. Items extended to a 24-month STI (analyzed in this safety evaluation section IV.A) are denoted, as stated in Specification 1.0.T, as "R". Items not extended to a 24-month STI are denoted as "18M". In addition, the title of Table 4.2-3 is revised to correct a typographical error, and the component designators used in Specification 3.5.A.3.b are changed to reflect standard component labeling terminology.

Table 4.2-6 Note 1a is revised to clarify that the reactor vessel water level-high instrument functional test is performed once per 24 months during each refueling outage. Table 4.2-6 was added to the Technical Specifications by Amendment 225 to clarify operability and surveillance requirements for the reactor vessel overfill protection instrumentation. The basis for the instrument functional test frequency specified in Note 1 of the Table is to permit testing of this function while the plant is shutdown, thereby avoiding the risk of a plant transient. The Safety Evaluation for Amendment 225 acknowledges that the length of the FitzPatrick fuel cycle is based on a 24 month period, therefore, this change is administrative in nature and does not change the STI for the instrument functional test.

These changes are editorial in nature and do not change any Technical Specification requirement. As such, there are no safety implications in these proposed changes.

2. Editorial Changes to Table 3.2-10 Remote Shutdown Instrumentation and Associated Bases Section (Changes 1.C.5, 1.C.6, 1.C.8, 1.C.9, 1.C.10, 1.C.11, 1.C.12, 1.C.13, 1.C.14)

The changes to Table 3.2-10 clarify operability and surveillance requirements by adding components previously omitted from the table, and reformat the table to make it consistent with other instrumentation tables in the Technical Specifications.

Table 3.2-10 was added to the Technical Specifications in Amendment 216 to provide operability and surveillance requirements for the remote shutdown instrumentation and controls. The table lists the instrumentation and control functions for the remote shutdown capabilities. The transfer/isolation switches, which transfer control of the particular function from the control room to the remote location, were not listed on the table based on the premise that testing of a control switch also demonstrates operability of its associated transfer/isolation switch. During implementation of Amendment 216, it was noted that certain transfer/isolation switches have control functions, but no separate control switch, and therefore should be listed on Table 3.2-10. In addition, typographical errors and omission of a monthly instrument check for two meters were also discovered.

The following specific changes are proposed to correct these errors:

- Revise Table 3.2-10 to add isolation switches for the reactor head vent valve (02AOV-17), the outboard main steam isolation valves (MSIVs), the East crescent area coolers, safety relief valves and Automatic Depressurization System (ADS) valves. Although these switches are not currently listed on the table, they have been tested under the requirements of SR 4.2.J since implementation of Amendment 216. These changes result in the addition of pages 77n and 77o to the Technical Specifications, relocation of the Notes section to page 77o, and revision to the note at the top of each page referring the user to the Notes on page 77o.

- Revise the format of the table to be consistent with other instrument tables in the Technical Specifications by adding columns for Instrument Check, Instrument Calibration and Functional Testing frequency. The frequency is designated using the notations in Specification 1.0.T. Addition of these eliminates the need for Notes B,C and D, that are currently on page 77m.

- Change the component designator for the EDG B and D Emergency Bus meters (Items 65 and 74) to correct a typographical error. This does not change the actual meter used for this function.

- Added requirement for a monthly instrument check for Items 65 and 74. The instrument check requirement was overlooked in the development of the original table. A monthly instrument check is required on these meters because they are normally energized. Although not currently identified on the table for Items 65 and 74, a monthly instrument check of these meters has been performed under the requirements of SR 4.2.J since implementation of Amendment 216.

These changes clarify operability and surveillance requirements for remote shutdown equipment, and incorporate editorial changes to Table 3.2-10. These changes do not propose any new surveillance requirements, nor revise any existing requirement. As such, there are no safety implications in these proposed changes.

3. <u>Changes to the Technical Specification Bases to reflect change in operating cycle from 18 to 24 months (Changes 1.C.1, 1.C.2, 1.C.3, 1.C.20 and 1.C.21)</u>

These changes to the Technical Specification Bases revise terms such as "each refueling outage," "during refueling outage," "once per operating cycle," and "once per 18 months" to "once per 24 months" to provide consistency between the surveillance test intervals and the Bases discussion. The basis changes clarify the new STIs and do not propose new or different system design limits. As such, there are no safety implications in these proposed bases changes.

V. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Operation of the FitzPatrick plant in accordance with the proposed Amendment would not involve a significant hazards consideration as defined in 10 CFR 50.92, since it would not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed STI changes evaluated in Section IV.A do not involve any physical changes to the plant, do not alter the way these systems function, and will not degrade the performance of the plant safety systems. Proposed instrument setpoint changes ensure that plant safety limits are not exceeded due to instrument drift predicted for the longer calibration interval. The type of testing and the corrective actions required if the subject surveillances fail remains the same. The proposed changes do not adversely affect the reliability of these systems or affect the ability of the systems to meet their design objectives. A historical review of surveillance test results supports these conclusions.

The Trip Level Setpoint changes evaluated in Section IV.B ensure that the related systems perform as assumed in the transient and accident analysis by ensuring that plant safety limits are not exceeded due to instrument drift predicted for the longer calibration interval. The changes do not alter the system function, and will not degrade the performance of plant safety systems. The proposed Trip Level Setting changes do not adversely affect the reliability of these systems or adversely affect the ability of these systems to meet their design objectives.

The editorial, clarification and Bases changes evaluated in Section IV.C propose enhancements that clarify the Technical Specifications requirements and are editorial in nature. These changes do not alter any Technical Specification requirement, do not involve physical changes to the plant, or alter any operational setpoints. There are no safety implications in these proposed changes.

2. create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed STI changes evaluated in Section IV.A do not modify the design or operation of the plant, therefore, no new failure modes are introduced. Proposed instrument setpoint changes ensure that plant safety limits are not exceeded due to instrument drift resulting from the longer calibration interval. No changes are proposed to the type and method of testing performed, only to the length of the surveillance test interval. Past equipment performance and on-line testing indicate that longer test intervals will not degrade these systems. A historical review of surveillance test results supports these conclusions.

The Trip Level Setpoint changes evaluated in Section IV.B ensure that the related systems perform as assumed in the transient and accident analysis by ensuring that plant safety limits are not exceeded due to instrument drift predicted for the longer calibration interval. The changes do not alter the system function, introduce any new failure modes, and will not degrade the performance of plant safety systems. The proposed Trip Level Setting changes do not adversely affect the reliability of these systems or adversely affect the ability of these systems to meet their design objectives.

The editorial, clarification and Bases changes evaluated in Section IV.C propose enhancements that clarify the Technical Specifications requirements and are editorial in nature. These changes do not alter any Technical Specification requirement, do not involve physical changes to the plant, or alter any operational setpoints. There are no safety implications in these proposed changes.

3. involve a significant reduction in a margin of safety.

Although the proposed STI changes evaluated in Section IV.A will result in an increase in the interval between surveillance tests, the impact on system reliability is minimal. This is based on more frequent on-line testing and the redundant design of the evaluated systems. A review of past surveillance history has shown no evidence of failures which would significantly impact the reliability of these systems. Operation of the plant remains unchanged by these proposed STI extensions. The assumptions in the Plant Licensing Basis are not adversely impacted. Therefore, the proposed changes do not result in a significant reduction in the margin of safety.

The Trip Level Setpoint changes evaluated in Section IV.B ensure that the related systems perform as assumed in the transient and accident analysis by ensuring that plant safety limits are not exceeded due to instrument drift predicted for the longer calibration interval. The changes do not alter the system function, introduce any new failure modes, and will not degrade the performance of plant safety systems. The proposed Trip Level Setting changes do not adversely affect the reliability of these systems or adversely affect the ability of these systems to meet their design objectives.

The editorial, clarification and Bases changes evaluated in Section IV.C propose enhancements that clarify the Technical Specifications requirements and are editorial in nature. These changes do not alter any Technical Specification requirement, do not involve physical changes to the plant, or alter any operational setpoints. There are no safety implications in these proposed changes.

VI. IMPLEMENTATION OF THE PROPOSED CHANGE

Implementation of the proposed changes will not adversely affect the ALARA or Fire Protection Programs at the FitzPatrick plant, nor will the changes affect the environment.

Implementation of this proposed Amendment requires changes to certain plant instrumentation setpoints. The affected instruments have been identified in Section IV of the safety evaluation, and on Table 1, List of Commitments. The Authority requests approval of these proposed changes to support implementation upon startup from Refueling Outage 13 (currently scheduled for fall 1996).

VII. CONCLUSION

Based on the discussion above, the identified STIs can be safely extended to accommodate a 24 month operating cycle. The assumptions in the FitzPatrick licensing basis are not invalidated by performing these surveillances at the bounding interval limits (30 months) to accommodate the 24 month operating cycle.

The Plant Operating Review Committee (PORC) and the Safety Review Committee (SRC) have reviewed these proposed changes to the Technical Specifications and have concluded that they do not involve an unreviewed safety question, or a significant hazards consideration, and will not endanger the health and safety of the public.

VIII. REFERENCES

1. Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate 24-Month Fuel Cycle."

2. Meeting Minutes for February 23, 1993, Meeting to Discuss Extension of Reactor Protection System Surveillance Intervals Required for a 24 Month Refueling Cycle (TAC No. M85824)(IP3).

3. Instrument Society of America Report ISA-RP-67.04, Part II, August 1994, Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation.

4. NRC Bulletin No. 90-01, Supplement 1, "Loss of Fill Oil in Transmitters Manufactured by Rosemount," dated December 22, 1992.

5. NYPA Report JAF-RPT-RPS-01324 Revision 3, "Reactor Protection System Surveillance Test Extensions," dated December 1995.

6. NYPA Report JAF-RPT-RPS-00456, Revision 1, "Instrument Drift Analysis for RPS," dated October, 1993.

7. NYPA letter to NRC, JPN-93-010, dated March 5, 1993, "Response to NRC Bulletin No. 90-01, Supplement 1 Loss of Fill-Oil in Transmitters Manufactured by Rosemount."

8. NYPA Report JAF-RPT-PC-01529 Revision 1, "Primary Containment Isolation Surveillance Test Extensions," dated September 22, 1995.

9. NYPA Report JAF-RPT-PC-01283, "Instrument Drift Analysis for PCIS," dated February 18, 1994.

10. NYPA Report JAF-RPT-MULTI-01530 Revision 2, "ECCS Actuation Systems Surveillance Test Extensions," dated November, 1995.

11. NYPA Report JAF-RPT-MULTI-01561 Revision 1, "Surveillance Test Extensions for ECCS Mechanical Systems," dated September 1, 1995.

12. NYPA Report JAF-RPT-MULTI-01359, "Instrument Drift Analysis for ECCS," dated February, 1994.

13. NYPA Report JAF-RPT-MISC-02082 Revision 1, "Miscellaneous Surveillance Test Extensions," dated December 14, 1995.

14. NYPA Report JAF-RPT-MULTI-01545 Revision 1, "Radiation Monitoring System Surveillance Test Extensions," dated December, 1995.

15. NYPA Report JAF-RPT-MULTI-02101, "Indicating Instruments Surveillance Test Extensions," dated September, 1995.

16. NYPA Report JAF-RPT-MULTI-01427, "Instrument Drift Analysis for Indicating Instruments," dated October 31, 1994.

17. NYPA Report JAF-RPT-MISC-01536, "Instrument Drift Analysis for Miscellaneous Instruments," dated November 28, 1994.

18. NYPA Report JAF-RPT-MULTI-00606 Revision 2, "Ventilation Systems Surveillance Test Extensions," dated November, 1995.

19. NYPA Report DC-92-006 Revision 2 (NOS-93-238), Instrument Drift Analysis for JAFNPP Ventilation Systems.

20. NYPA Report JAF-RPT-MULTI-01116 Rev.2, "Containment Systems Surveillance Test Extensions," dated 12/20/95.

21. NYPA Calculation JAF-CALC-ELEC-01488 Rev.1, "4kV Emergency Bus Loss of Voltage, Degraded Voltage, and Time Delay Relay Uncertainty and Setpoint Calculation," dated 11/29/95.

22. NYPA Calculation JAF-CALC-ELEC-00757 Rev. 6, "Setpoint Calculations to Extend Operating Cycle, and for Power Uprate-71EPA-RPS1A1G, 1A2G, 1B1G, 1B2G RPS EPA (Normal Supply Feeder)," dated December 1995.

23. NYPA Calculation JAF-CALC-RPS-01516, "RPS Voltage Drop Assessment."

24. NUREG-0123, Revision 3, "Standard Technical Specifications for General Electric Boiling Water Reactors (BWR/5)," dated Fall 1980.

25. NUREG-1433, Revision 1, "Standard Technical Specifications for General Electric Plants, BWR/4," dated April 1995.

Table 1: List of Commitments

Commitment Number	Commitment	Due Date
JPN-96-003-01	Implement procedural guidance to evaluate loop calibration failures considering 24 month operating cycle drift.	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-02	Change the RPS Reactor Water Level Instrument setpoint (Table 4.1-2 Item 7)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-03	Change the MSIV limit switch setpoints (Table 4.1-2 Item 10)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-04	Change the Turbine Stop Valve limit switch setpoints (Table 4.1-2 Item 13)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-05	Change the RPS EPA Normal & Alternate Time Delay Relay setpoints	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-06	Change the RPS Normal Supply EPA Undervoltage Trip setpoint	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-07	Change the Main Steam Low Pressure Trip setpoint (Table 4.2-1 Item 5)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-08	Change the Main Condenser Low Vacuum Trip setpoint (Table 4.2-1 Item 7)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-09	Change the HPCI Steam Line High Flow Trip setpoint (Table 4.2-1 Item 9)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-10	Change the 4kV Undervoltage and Degraded Voltage Relay and Timer setpoints (Table 4.2-2 Item 9)	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-11	Review Control Rod Block Surveillance Procedures to verify consistent with testing stated in Standard Technical Specifications.	1996 Refuel Outage (Reload 12/Cycle13)
JPN-96-003-12	Change the Containment High Range Radiation Monitor setpoint (Table 4.2-8 Item4)	1996 Refuel Outage (Reload 12/Cycle13)