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Docket Number 50-346

License Number NPF-3

Serial Number 2722

October 9, 2001

United States Nuclear Regulatory Commission
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Subject: License Amendment Application to Revise Technical Specifications Regarding
Steam and Feedwater Rupture Control System (SFRCS) Instrumentation Setpoints
and Surveillance Intervals (License Amendment Request No. 01-0005)

Ladies and Gentlemen:

Enclosed is an application for an amendment to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1 Operating License Number NPF-3, Appendix A, Technical Specifications. The proposed changes affect Technical Specification (TS): 3/4.3.2.2, "Instrumentation - Steam and Feedwater Rupture Control System Instrumentation," including Table 3.3-11, "Steam and Feedwater Rupture Control System Instrumentation," Table 3.3-12, "Steam and Feedwater Rupture Control System Instrumentation Trip Setpoints," and Table 4.3-11, "Steam and Feedwater Rupture Control System Instrumentation Surveillance Requirements." Related administrative changes are proposed to TS 3/4.3.2.3, "Instrumentation - Anticipatory Reactor Trip System Instrumentation," Table 3.3-17, "Anticipatory Reactor Trip System Instrumentation," and TS 3/4.3.3.1, "Instrumentation - Monitoring Instrumentation - Radiation Monitoring Instrumentation," Table 3.3-6, "Radiation Monitoring Instrumentation." Related changes to associated TS Bases 3/4.3.1 and 3/4.3.2, "Reactor Protection System and Safety System Instrumentation," are also proposed.

The main purpose of this license amendment application is to decrease the Channel Functional Test frequency from monthly to quarterly for the SFRCS Instrumentation Channels. This would remove testing from the scope of the upcoming Thirteenth Refueling Outage (13RFO). In order to support planning for 13RFO, the DBNPS requests that this license amendment application be approved by March 11, 2002.

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Should you have any questions or require additional information, please contact
Mr. David H. Lockwood, Manager - Regulatory Affairs, at (419) 321-8450.

Very truly yours,

A handwritten signature in black ink, appearing to read "S. P. Sands". The signature is fluid and cursive, with the first name "S. P." and the last name "Sands" clearly distinguishable.

MKL

Enclosures

cc: J. E. Dyer, Regional Administrator, NRC Region III
S. P. Sands, NRC/NRR Project Manager
D. J. Shipley, Executive Director, Ohio Emergency Management Agency,
State of Ohio (NRC Liaison)
D. S. Simpkins, NRC Region III, DB-1 Resident Inspector
Utility Radiological Safety Board

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APPLICATION FOR AMENDMENT
TO
FACILITY OPERATING LICENSE NUMBER NPF-3
DAVIS-BESSE NUCLEAR POWER STATION
UNIT NUMBER 1

Attached are the requested changes to the Davis-Besse Nuclear Power Station, Unit Number 1 Facility Operating License Number NPF-3. Also included is the Safety Assessment and Significant Hazards Consideration.

The proposed changes (submitted under cover letter Serial Number 2722) concern Appendix A, Technical Specifications:

- 3/4.3.2.2 Instrumentation - Steam and Feedwater Rupture Control System Instrumentation
- 3/4.3.2.3 Instrumentation - Anticipatory Reactor Trip System Instrumentation
- 3/4.3.3.1 Instrumentation - Monitoring Instrumentation - Radiation Monitoring Instrumentation
- Bases 3/4.3.1 Reactor Protection System and Safety System Instrumentation and 3/4.3.2

I, Guy G. Campbell, state that (1) I am Vice President - Nuclear of the FirstEnergy Nuclear Operating Company, (2) I am duly authorized to execute and file this certification on behalf of the Toledo Edison Company and The Cleveland Electric Illuminating Company, and (3) the statements set forth herein are true and correct to the best of my knowledge, information and belief.

By: 
Guy G. Campbell, Vice President - Nuclear

Affirmed and subscribed before me this 9th day of October, 2001.


Notary Public, State of Ohio - Nora L. Flood
My commission expires September 4, 2002.

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The following information is provided to support issuance of the requested changes to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1 Operating License Number NPF-3, Appendix A, Technical Specifications (TS): 3/4.3.2.2, "Instrumentation - Steam and Feedwater Rupture Control System Instrumentation," TS 3/4.3.2.3, "Instrumentation - Anticipatory Reactor Trip System Instrumentation," TS 3/4.3.3.1, "Instrumentation - Monitoring Instrumentation - Radiation Monitoring Instrumentation," and TS Bases 3/4.3.1 and 3/4.3.2, "Reactor Protection System and Safety System Instrumentation":

A. Time Required to Implement: The License Amendment associated with this license amendment application is to be implemented within 120 days after NRC issuance.

B. Reason for Change (License Amendment Request Number 01-0005):

The proposed changes affect Technical Specification (TS): 3/4.3.2.2, "Instrumentation - Steam and Feedwater Rupture Control System Instrumentation," including Table 3.3-11, "Steam and Feedwater Rupture Control System Instrumentation," Table 3.3-12, "Steam and Feedwater Rupture Control System Instrumentation Trip Setpoints," and Table 4.3-11, "Steam and Feedwater Rupture Control System Instrumentation Surveillance Requirements." Related administrative changes are proposed to TS 3/4.3.2.3, "Instrumentation - Anticipatory Reactor Trip System Instrumentation," Table 3.3-17, "Anticipatory Reactor Trip System Instrumentation," and TS 3/4.3.3.1, "Instrumentation - Monitoring Instrumentation - Radiation Monitoring Instrumentation," Table 3.3-6, "Radiation Monitoring Instrumentation." Related changes to associated TS Bases 3/4.3.1 and 3/4.3.2, "Reactor Protection System and Safety System Instrumentation," are also proposed. The main purpose of this license amendment application is to decrease the Channel Functional Test frequency from monthly to quarterly for the SFRCS Instrument Channels. This would remove testing from the scope of the upcoming Thirteenth Refueling Outage (13RFO).

C. Safety Assessment and Significant Hazards Consideration: See Attachment 1.

D. Environmental Consideration: See Attachment 2.

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Serial Number 2722
Attachment 1

**SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 01-0005**

(31 pages follow)

**SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 01-0005**

TITLE:

Proposed Modification to the Davis-Besse Nuclear Power Station Unit No. 1 (DBNPS) Facility Operating License NPF-3, Appendix A - Technical Specifications, to Revise Steam and Feedwater Rupture Control System (SFRCS) Instrumentation Setpoints and Surveillance Intervals

DESCRIPTION:

The overall purpose of this License Amendment Request is to:

- Revise the Steam and Feedwater Rupture Control System (SFRCS) Instrumentation Technical Specifications (TSs) to clearly identify the appropriate actions to be taken if an SFRCS instrumentation channel's output logic becomes inoperable,
- Remove the SFRCS Instrumentation Trip Setpoints from the TSs, and
- Decrease the Channel Functional Test frequency from monthly to quarterly for the SFRCS Instrument Channels.

The proposed changes affect Technical Specification (TS): 3/4.3.2.2, "Instrumentation - Steam and Feedwater Rupture Control System Instrumentation," including Table 3.3-11, "Steam and Feedwater Rupture Control System Instrumentation," Table 3.3-12, "Steam and Feedwater Rupture Control System Instrumentation Trip Setpoints," and Table 4.3-11, "Steam and Feedwater Rupture Control System Instrumentation Surveillance Requirements." Related administrative changes are proposed to TS 3/4.3.2.3, "Instrumentation - Anticipatory Reactor Trip System Instrumentation," Table 3.3-17, "Anticipatory Reactor Trip System Instrumentation," and TS 3/4.3.3.1, "Instrumentation - Monitoring Instrumentation - Radiation Monitoring Instrumentation," Table 3.3-6, "Radiation Monitoring Instrumentation." Related changes to associated TS Bases 3/4.3.1 and 3/4.3.2, "Reactor Protection System and Safety System Instrumentation," are also proposed. These changes are described in further detail below.

Table 3.3-11, "Steam and Feedwater Rupture Control System Instrumentation"

Changes are proposed to Table 3.3-11 in order to separate the TS requirements for the Steam and Feedwater Rupture Control System (SFRCS) instrumentation channels and output logic. Separating these TS requirements will provide for the appropriate action to be taken should a failure occur in an SFRCS instrumentation channel or output logic.

It is proposed that a new Functional Unit 5, "Output Logic," be designated in Table 3.3-11, with a "2" in the "Total No. of Channels" column, a "1" in the "Channels to Trip" column, a "2" in the "Minimum Channel Operable" column, and an "18" in the "Action" column. Associated with this new Functional Unit, a new Action Statement, Action 18, is proposed to be added to Table 3.3-11, to read as follows:

With any component in the Output Logic inoperable, declare the associated actuated component(s) inoperable, or place the associated actuated component(s) in the SFRCS-actuated position within one hour.

Associated with these changes, the current Functional Unit 5 in Table 3.3-11, "Manual Initiation (Push buttons)," is proposed to be renumbered as Functional Unit 6.

Table 3.3-12, "Steam and Feedwater Rupture Control System Instrumentation Trip Setpoints"

The NRC's NUREG-1430, "Standard Technical Specifications – Babcock and Wilcox Plants," Revision 2, does not require trip setpoints to be listed in the instrumentation TS. Rather, the existing trip setpoint Allowable Values are listed. As a result, the "Trip Setpoint" values for all of the Functional Units are proposed to be removed from Table 3.3-12. The "Trip Setpoint" column heading is proposed to be removed accordingly.

Since the "Trip Setpoint" column is being removed from Table 3.3-12, the SFRCS Limiting Condition for Operation (LCO) 3.3.2.2, which refers to this column, must be revised. This LCO is proposed to read as follows:

The Steam and Feedwater Rupture Control System (SFRCS) instrumentation channels shown in Table 3.3-11 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Allowable Values column of Table 3.3-12.

As a result of revised instrumentation trip setpoint calculations and surveillance testing practices regarding Channel Functional Testing and Channel Calibration, the following changes are proposed. The "Allowable Values" specified via Footnote "***" as applicable to Channel Calibration for Functional Unit 1, "Steam Line Pressure – Low," and Functional Unit 3, "Steam Generator Feedwater Differential Pressure - High," are proposed to be removed from the table since the same Allowable Value applicable to Channel Functional Testing is used for Channel Calibration. The "Allowable Value" specified as applicable to Channel Functional Testing via Footnote "*" for Functional Unit 3 is proposed to be reduced from " ≤ 197.6 psid" to " ≤ 179.2 psid." Also, the applicability of the Allowable Values for Functional Unit 4, "Reactor Coolant Pumps – Loss of," which are currently specified via Footnote "#" as applicable to Channel Functional Testing and Channel Calibration, is proposed to be specified via Footnote "*" as applicable to Channel Functional Testing only. With these changes, Footnotes "***" and "#" are no longer used in the table, and can therefore be deleted.

Table 4.3-11, "Steam and Feedwater Rupture Control System Instrumentation Surveillance Requirements"

Consistent with the proposed addition of a new Functional Unit 5 to Table 3.3-11, it is proposed that a new Functional Unit 2, "Output Logic," be designated in Table 4.3-11, with an "NA" (Not Applicable) in the "Channel Check" and "Channel Calibration" columns, and an "M" (Monthly) in the "Channel Functional Test" column.

In addition, the Channel Functional Test surveillance intervals for the four Functional Unit 1 Instrument Channels listed in Table 4.3-11 are proposed to be changed from "M" to "Q" (Quarterly). TS Table 1.2, "Frequency Notation," defines "M" as "at least once per 31 days," and "Q" as "at least once per 92 days."

Associated with these changes, the current Functional Unit 2 in Table 4.3-11, "Manual Actuation," is proposed to be renumbered as Functional Unit 3.

Table 3.3-17, "Anticipatory Reactor Trip System Instrumentation"

Due to the proposed new Table 3.3-11 Action 18, current Actions 18, 19, and 20 in Table 3.3-17 are proposed to be renumbered as Actions 19, 20, and 21, respectively, as an administrative change.

Table 3.3-6, "Radiation Monitoring Instrumentation"

Due to the proposed new Table 3.3-11 Action 18, current Actions 21 and 22 in Table 3.3-6 are proposed to be renumbered as Actions 22 and 23, respectively, as an administrative change.

Bases 3/4.3.1 and 3/4.3.2, "Reactor Protection System and Safety System Instrumentation"

Consistent with the proposed removal of the trip setpoint values from Table 3.3-12, the Bases is proposed to be revised to include SFRCS, in its entirety, in the discussion of instrumentation for which only the Allowable Value is specified in the TS.

Consistent with the proposed changes to Table 3.3-11, separating the TS requirements for the SFRCS instrumentation channels and output logic, and adding a new Action statement for the output logic, a change to the last sentence of the Bases paragraph, discussing the appropriate action to be followed in the event that the SFRCS response time surveillance requirement can not be met due to inoperable components within the SFRCS, is proposed. The new sentence would read as follows:

When the SFRCS RESPONSE TIME surveillance requirement can not be met due to inoperable components within the SFRCS, the applicable ACTION statement of Table 3.3-11 should be followed.

In addition, a new paragraph describing the basis for the quarterly Channel Functional Test surveillance interval for the SFRCS Instrument Channels is also proposed. The new paragraph would read as follows:

The quarterly (Q) CHANNEL FUNCTIONAL TEST interval for the SFRCS Instrument Channels is based on a statistical analysis of the one month functional check as-found, as-left (AFAL) setpoint data for the subject instruments as provided in EPRI TR-103335-R1, "Guidelines for Instrument Calibration Extension/Reduction-Revision 1: Statistical Analysis of Instrument Calibration Data."

SYSTEMS, COMPONENTS AND ACTIVITIES AFFECTED:

The TS Steam and Feedwater Rupture Control System (SFRCS) instrumentation trip setpoints used to determine the operability of SFRCS instrumentation channels are affected by the proposed changes. The required surveillance intervals associated with the SFRCS instrumentation channels are also affected by the proposed changes. As a result of these proposed changes, the SFRCS TS Bases are affected and the TS Action statements for the Anticipatory Reactor Trip System and the Radiation Monitoring System are administratively affected.

FUNCTION OF THE AFFECTED SYSTEMS, COMPONENTS AND ACTIVITIES:

The Steam and Feedwater Rupture Control System (SFRCS) is described in the DBNPS Updated Safety Analysis Report (USAR) Section 7.4.1.3. The purpose of the SFRCS is to mitigate the release of high energy steam, to automatically start the Auxiliary Feedwater System in the event of a main steam line or main feedwater line rupture, to automatically start the Auxiliary Feedwater System on the loss of both main feed pumps or the loss of all four reactor coolant pumps, and to prevent steam generator overfill and subsequent spillover into the main steam lines. The SFRCS also provides a trip signal to the Anticipatory Reactor Trip System (ARTS), and a trip signal to the main turbine.

The SFRCS is comprised of two independent and redundant protection channels. Each channel has its own independent sensors, which are physically separated from the other channel's sensors and from non-safety system components. No communication of any kind exists between either protection channel.

For the purpose of testability and reliability, each SFRCS protection channel is further divided into two sensing channels and two trip logic channels. Each sensing channel provides all monitored digital plant status signals to either logic channel via signal buffer modules, thus making both sets of sensing and logic channels electrically independent. The corresponding output signals of each logic channel are "AND-gated" to form the output logic (actuation) channel.

Signal processing is performed in the SFRCS logic cabinets. The status signal from each corresponding sensing channel monitoring the same plant variable is combined in a

“2-out-of-2” logic before it is further processed by the SFRCS logic module. The SFRCS observes continuously two SFRCS sensing and logic channels for a simultaneous trip condition before actual SFRCS trip signals are sent to the SFRCS actuation channel. This makes the actual trip logic of each of the two redundant SFRCS protection channels a “2-out-of-2” logic.

The function of the SFRCS instrumentation TS is to ensure that the associated action and/or trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, the specified coincidence logic is maintained, sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and sufficient system functional capability is available for SFRCS purposes from diverse parameters.

EFFECTS ON SAFETY:

Table 3.3-11, “Steam and Feedwater Rupture Control System Instrumentation”

As previously described, it is proposed that a new Functional Unit 5, “Output Logic,” be designated in Table 3.3-11, with a “2” in the “Total No. of Channels” column, a “1” in the “Channels to Trip” column, a “2” in the “Minimum Channel Operable” column, and an “18” in the “Action” column. Associated with this new Functional Unit, a new Action Statement, Action 18, is proposed to be added to Table 3.3-11, requiring that with any component in the output logic inoperable, the associated actuated component(s) be declared inoperable or placed in the SFRCS-actuated position within one hour.

These proposed changes have the desired effect of separating the TS requirements for the SFRCS instrumentation channels and output logic. This approach is consistent with the general approach found in NUREG-1430, “Standard Technical Specifications - Babcock and Wilcox Plants,” Revision 2, wherein separate TS requirements are provided for instrumentation channels and output logic, reflecting the different impact each has on instrumentation system operability.

The proposed column entries for the new Functional Unit 5 are consistent with the system design for the SFRCS output logic. The proposed Action 18 is consistent with the approach utilized in NUREG-1430 Section 3.3.7, “Engineered Safety Feature Actuation System (ESFAS) Automatic Actuation Logic,” which, in the event that one or more automatic actuation logic matrices are inoperable, allows one hour to either place the associated component(s) in the engineered safeguard configuration, or to declare the associated component(s) inoperable. Placing the actuated component in its SFRCS-actuated position is equivalent to the output logic performing its safety feature ahead of time. Since the true effect of the output logic inoperability is inoperability of the supported system, an alternative action is to declare the associated component inoperable and enter the required actions of the affected supported system. The proposed one hour time limit for completion of either of these options is consistent with NUREG-1430 Section 3.3.7. As stated in NUREG-1430 Bases 3.3.7, the one hour completion time is based on operating experience and reflects the urgency associated with the inoperability of a safety system component. Based on the above, these proposed changes will have no adverse effect on nuclear safety.

The proposed renumbering of the current Functional Unit 5, “Manual Initiation (Push buttons),” to Functional Unit 6 is an administrative change which will have no adverse effect on nuclear safety.

Table 3.3-12, “Steam and Feedwater Rupture Control System Instrumentation Trip Setpoints”

The proposed removal of the “Trip Setpoint” values for all of the SFRCS Functional Units is consistent with NUREG-1430, which specifies only the Allowable Values for instrumentation Functional Units. Nominal trip setpoints are specified in the setpoint analysis, and are included in the DBNPS Instrument Index, a DBNPS-controlled document, for reference. The SFRCS trip setpoints being removed from the TS will be listed in the DBNPS USAR no later than the implementation of the requested license amendment. Future changes to these trip setpoints will be under the regulatory controls of 10 CFR 50.59, “Changes, Tests, and Experiments.” These changes will be submitted to the NRC in accordance with the USAR revision requirements of 10 CFR 50.71(e) and 10 CFR 50.59(d). Based on the above, this change will have no adverse effect on nuclear safety.

The proposed removal of the “Trip Setpoint” column from Table 3.3-12 requires that SFRCS TS LCO 3.3.2.2 be changed to reflect this removal. The proposed change to TS LCO 3.3.2.2 references the “Allowable Values” column of Table 3.3-12 instead of the “Trip Setpoint” column. In addition, since the TS LCO will now only refer to the “Allowable Values” column, the previous exception of the Steam Generator Level – Low Functional Unit referencing the “Allowable Values” column in lieu of the “Trip Setpoint” column can be deleted. These changes are administrative changes related to the proposed Table 3.3-12 changes and have no adverse effect on nuclear safety.

Consistent with an updated calculation and current setpoint methodology, the “Allowable Value” for Table 3.3-12 Functional Unit 3, “Steam Generator Feedwater Differential Pressure – High,” is proposed to be changed from “ ≤ 197.6 psid” to “ ≤ 179.2 psid. The updated calculation has been prepared in accordance with Instrument Society of America (ISA) Standard S67.04, “Setpoints for Nuclear Safety-Related Instrumentation,” September 1994, and ISA-RP67.04, Part II, “Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation,” September 1994. ISA S67.04 Part I- 1994 has been endorsed by the Nuclear Regulatory Commission (NRC) through Regulatory Guide (RG) 1.105, Revision 3, “Setpoints for Safety-Related Instrumentation,” subject to four listed exceptions and clarifications. The four listed exceptions and clarifications, taken verbatim from RG 1.105, and the DBNPS-specific response to each are as follows:

RG 1.105 Regulatory Position C.1

Section 4 of ISA-S67.04-1994 specifies the methods, but not the criterion, for combining uncertainties in determining a trip setpoint and its allowable values. The 95/95 tolerance limit is an acceptable criterion for uncertainties. That is, there is a 95% probability that the constructed limits contain 95% of the population of interest for the surveillance interval selected.

DBNPS Response to Regulatory Position C.1

The 95/95 tolerance limit methodology is not applied directly to calculations at the DBNPS regarding confidence in equipment uncertainties. Much of the instrumentation is of a vintage that the equipment manufacturer specifications do not include uncertainty confidence data.

As an alternative, a sample of historical calibration data was reviewed for this license amendment application to establish an acceptable confidence in uncertainty values for the Steam Generator Feedwater Differential Pressure - High instrument string. The monthly calibration records for all eight instruments in both actuation channels (four instruments in each of two logic channels) were included in the review sample, which spanned from January 12, 1998 to March 5, 2001 (38 months). For over 98% of the sample (315 of 321), the as-found readings were within the allowable tolerance of the as-left values, such that the instrument strings did not require any adjustment. In only one case (0.3% of the sample) did the as-found value exceed the current Technical Specification trip setpoint of less than or equal 197.6 psid. That value was 200 psid and was attributed to an incorrect adjustment. These results demonstrate that even if equipment uncertainty values were higher than assumed in the setpoint calculation, this effect would be at least partially offset by the margin available from the calibration tolerance which is included in the instrument string calculation.

This license amendment application includes a proposed reduction of the Allowable Value from 197.6 psid to 179.2 psid. Also, as described below, the tolerance interval in the setpoint calculation is for a confidence level of 95% with 95% of the population contained within the tolerance interval. This proposed change provides even greater margin with respect to the analytical limit of 200 psid.

Another factor of note is that in order to provide additional margin and to account for field setting tolerances, a setpoint tolerance is established. Margin is gained because the field device is rarely calibrated with the setpoint at the maximum allowed field setting. Any difference between the maximum allowed field setting and the actual field setting results in increased margin from the analytical limit.

The setpoint verification presently performed for channel calibration is accomplished by applying a pressure at the switch and reading a pressure value from the gauge at the switch when it trips. This setpoint verification encompasses the switch and its trip function and, therefore, provides a high confidence in the accuracy of the trip setpoint setting.

In summary, the intended end result of establishing a tolerance limit criterion for uncertainties (such as 95/95) to ensure an accurate instrumentation response, is met at the DBNPS by means of the calculation methods, instrument string calibration, and setpoint verification.

RG 1.105 Regulatory Position C.2

Sections 7 and 8 of Part 1 of ISA-S67.04-1994 reference several industry codes and standards. If a referenced standard has been incorporated separately into the NRC's regulations, licensees and applicants must comply with that standard as set forth in the regulation. If the referenced standard has been endorsed in a regulatory guide, the standard constitutes a method acceptable to the NRC staff of meeting a regulatory requirement as described in the regulatory guide. If a referenced standard has been neither incorporated into the NRC's regulations nor endorsed in a regulatory guide, licensees and applicants may consider and use the information in the referenced standard if appropriately justified, consistent with current regulatory practice.

DBNPS Response to Regulatory Position C.2

Of the standards listed in Section 7 of Part 1 of ISA-S67.04-1994, Standard ANSI/ISA-S51.1, "Process Instrumentation Terminology," is not known to be incorporated separately into the NRC's regulations nor endorsed in a regulatory guide. However, since this standard addresses only terminology, and has negligible impact on the technical content of the submittal and its associated calculation, its use does not require further justification. None of the other standards listed in Section 7 and none of the standards listed in Section 8 of Part 1 of ISA S67.04-1994 are used as part of the basis for this license amendment request.

RG 1.105 Regulatory Position C.3

Section 4.3 of ISA-S67.04-1994 states that the limiting safety system setting (LSSS) may be maintained in technical specifications or appropriate plant procedures. However, 10 CFR 50.36 states that the technical specifications will include items in the categories of safety limits, limiting safety system settings (LSSS), and limiting control settings. Thus, the LSSS may not be maintained in plant procedures. Rather, the LSSS must be specified as a technical specification-defined limit in order to satisfy the requirements of 10 CFR 50.36. The LSSS should be developed in accordance with the setpoint methodology set forth in the standard, with the LSSS listed in the technical specifications.

DBNPS Response to Regulatory Position C.3

In accordance with Section 4.3 of Part 1 of ISA S67.04-1994, the purpose of a LSSS is to assure that protective action is initiated before the process conditions reach the analytical limit. In addition, the LSSS may be the allowable value, the trip setpoint, or both. The limiting safety system settings are developed in accordance with the setpoint methodology and maintained in the DBNPS Technical Specifications as allowable values. (Note: This license amendment request directly affects the Limiting Condition for Operation portion of the Technical Specifications and not the LSSS portion of the Technical Specifications.)

RG 1.105 Regulatory Position C.4

ISA-S67.04-1994 provides a discussion on the purpose and application of an allowable value. The allowable value is the limiting value that the trip setpoint can have when tested periodically, beyond which the instrument channel is considered inoperable and corrective action must be taken in accordance with the technical specifications. The allowable value relationship to the setpoint methodology and testing requirements in the technical specifications must be documented.

DBNPS Response to Regulatory Position C.4

The allowable value relationship to the setpoint methodology and testing requirements in the technical specifications is documented in the setpoint calculation. The setpoint calculation is maintained as part of plant records.

For the Steam Generator Feedwater Differential Pressure – High setpoint calculation, the analytical limit remained unchanged at 200 psid. Considering instrument string uncertainty, including drift, a nominal trip setpoint of 151.6 psid was calculated. The Allowable Value was calculated by subtracting the uncertainty values not tested during normal surveillance testing from the analytical limit. The parameters that are not tested during surveillance testing are abnormal switch temperature effects (20 psid uncertainty) and switch seismic effects (0.8 psid uncertainty). Therefore the Allowable Value was calculated to be 179.2 psid (200 – 20 – 0.8 psid). This proposed Allowable Value is consistent with updated calculations and current setpoint methodology, and will have no adverse effect on nuclear safety.

The applicability of the Allowable Values for Functional Unit 4, “Reactor Coolant Pumps – Loss of,” which are currently specified via Footnote “#” as applicable to Channel Functional Testing and Channel Calibration, is proposed to be specified via Footnote “*” as applicable to Channel Functional Testing. There is no distinction between the Channel Functional Test and Channel Calibration for this instrument loop. Thus, one Allowable Value for the entire instrument loop is all that is necessary for this instrument string. The proposed changes reflect current surveillance testing practices and will have no adverse effect on nuclear safety.

The “Allowable Values” specified via Footnote “**” as applicable to Channel Calibration for Functional Unit 1, “Steam Line Pressure – Low,” and Functional Unit 3, “Steam Generator Feedwater Differential Pressure - High,” are proposed to be removed from the table. For transmitters located in an inaccessible area due to plant conditions in that area (e.g., high temperature or high radiation), the Channel Functional Test would generally not include the transmitter. However, in the cases where the transmitter is accessible, the Channel Functional Test would generally be included in the Channel Calibration, and one Allowable Value for the entire instrument loop is all that is necessary. Since each of these SFRCS instrument strings are accessible during normal operation, a distinction between Allowable Values for Channel Functional Testing and Channel Calibration, or a combination thereof, is unnecessary. The proposed changes reflect current surveillance testing practices and will have no adverse effect on nuclear safety.

Based on the other proposed changes to Table 3.3-12, Footnotes “**” and “#” are no longer used. The deletion of these footnotes is therefore an administrative change, and will have no adverse effect on nuclear safety.

Table 4.3-11, “Steam and Feedwater Rupture Control System Instrumentation Surveillance Requirements”

The proposed addition of a new Functional Unit 2, “Output Logic,” to Table 4.3-11 is similar to the proposed change to Table 3.3-11. This change has the desired effect of separating the TS requirements for the SFRCS instrumentation channels and output logic. As previously mentioned, this approach is consistent with the general approach found in NUREG-1430, wherein separate TS requirements are provided for instrumentation channels and output logic, reflecting the different impact each has on instrumentation system operability. Based on the above, these changes will have no adverse effect on nuclear safety.

The proposed renumbering of the current Table 4.3-11 Functional Unit 2, “Manual Actuation,” to Functional Unit 3 is an administrative change which will have no adverse effect on nuclear safety.

There are no Channel Check or Channel Calibration requirements applicable to the output logic. Hence the proposed column entries of “NA” (Not Applicable) for the new Functional Unit 2 are appropriate. In addition, the proposed monthly Channel Functional Test surveillance interval requirement for the output logic is not a change to the existing Technical Specification since the output logic testing requirement is presently enveloped by Functional Unit 1, which is currently a monthly requirement. Channel Functional Testing for the output logic will continue to be performed on a monthly surveillance interval, therefore, these changes will have no adverse effect on nuclear safety.

The proposed increase in the Channel Functional Test surveillance interval for the four Functional Unit 1 Instrument Channels from monthly to quarterly is based on the statistical methodology described in EPRI TR-103335-R1, “Guidelines for Instrument Calibration Extension/Reduction – Revision 1: Statistical Analysis of Instrument Calibration Data,” with the following clarifications:

1. The calibration data was taken during a functional check and the instrument was adjusted if the as-found (AF) data was outside the tolerance. In most cases, the as-found and as-left (AL) setpoint are the same, indicative of no adjustment being made.
2. The three-month drift (D_i) was calculated using the following formula for a time period for which no adjustments or no replacements were made to the instrument:

$$D_i = AF - AL_{i-3}$$

where AF = as-found setpoint for the current functional check
 AL_{i-3} = as-left setpoint for the functional check 3 months
 previous

3. Since the duration (d_i) of the calculated three-month drift (D_i) was not always comprised of the same number of days, and the Technical Specification defines the quarterly interval as 92 days, the calculated three-month drift (Dc_i) was corrected based on the following equation:

$$Dc_i = D_i(92/d_i)$$

4. Due to the large sample size, an outlier analysis was not done.
5. Due to the large sample size and the industry experience with normally distributed drift data, the data was assumed to be normally distributed.
6. The tolerance interval was calculated for a confidence level of 95% with 95% of the population contained within the tolerance interval (TI) using the following equation:

$$TI_{(95/95)} = \bar{x} \pm ks$$

where $TI_{(95/95)}$ = tolerance interval for 95%/95%
 \bar{x} = Sample mean
 k = Tolerance factor (95/95)
 s = Sample standard deviation

7. If the sample mean is less than 0.01% of the instrument span, the sample mean was considered zero.
8. The following equations were used to determine the mean and standard deviation:

$$\text{Mean} = \bar{x} = (\sum Dc_i) / N$$

where N = sample count
 $i = 1$ to N

$$\text{Sample standard deviation} = [(1/(N-1)) ((\sum (Dc_i)^2) - N (\bar{x})^2)]^{1/2}$$

where N = sample count
 $i = 1$ to N

9. The random portion of the tolerance interval identified above includes the random effects of instrument uncertainty, calibration equipment uncertainty (CE), and drift. In this calculation, the random components of instrument uncertainty (SR) and calibration equipment uncertainty (CE)

was removed to determine the drift effect (DR). Bias associated with the mean of the data was attributed specifically to a drift bias.

$$DR = [(ks)^2 - (CE)^2 - (SR)^2]^{1/2}$$

The method used to determine the three-month drift for the instrument channels analyzed the one-month functional check as-found as-left (AFAL) setpoint data for the subject instruments. The drift analysis determined that the functional check for each trip setpoint may be performed at a quarterly frequency. With the proposed change in the Allowable Value for the Steam Generator Feedwater Differential Pressure – High channel (discussed above), the calculated values for the quarterly surveillance interval drift are less than the drift used in the calculations to determine the TS Allowable Values for each instrument string. Therefore, the surveillance interval for the functional check can be changed to quarterly without impact to the existing trip setpoint and Allowable Value.

A review of system maintenance records for the time period encompassing the drift study data collection period (January 1997 through April 2001) was performed. There were several component failures that appeared to be random in nature, however none of these failures would have prevented the system from performing its function. Therefore, based on this good equipment performance history, no hardware or maintenance enhancements are warranted to support the proposed surveillance interval increase.

In summary, the SFRCS instrumentation drift data has been reviewed and it has been confirmed that the drift over the proposed 92-day (quarterly) surveillance test interval will not cause the trip setpoint to be exceeded beyond the allowable value calculated by the setpoint methodology. On-site records, including calculations, supporting data, and setpoint methodology, are available for NRC inspection. Based on the maintenance records review and the use of the described setpoint methodology, the proposed changes will have no adverse effect on nuclear safety.

Table 3.3-17, “Anticipatory Reactor Trip System Instrumentation”

The proposed changes to renumber the current Table 3.3-17 Actions 18, 19, and 20 as Actions 19, 20, and 21, respectively, are a result of the proposed new Table 3.3-11 Action 18. These are administrative changes that will have no adverse effect on nuclear safety.

Table 3.3-6, “Radiation Monitoring Instrumentation”

The proposed changes to renumber the current Table 3.3-6 Actions 21 and 22 as Actions 22 and 23, respectively, are a result of the proposed new Table 3.3-11 Action 18. These are administrative changes that will have no adverse effect on nuclear safety.

Bases 3/4.3.1 and 3/4.3.2, “Reactor Protection System and Safety System Instrumentation”

The three proposed Bases changes are associated with the proposed changes to Tables 3.3-11, 3.3-12 and 4.3-11, and are administrative changes. The first change removes the reference to Table 3.3-12 Functional Unit 2 as having only an Allowable Value, now that the rest of

Table 3.3-12 will have only Allowable Values. The second change revises the discussion of the appropriate action to follow in the event that the SFRCS response time surveillance requirement can not be met due to inoperable components within the SFRCS. The current discussion refers to Table 3.3-11 Action 16. With the proposed changes to Table 3.3-11, either Action 16 or Action 18 could apply. Therefore, the proposed Bases change, making the discussion more general, is appropriate. The third change adds a statement that the SFRCS instrument quarterly Channel Functional Test interval is based on a statistical analysis as provided in EPRI TR-103335-R1. These administrative changes will have no adverse effect on nuclear safety.

SIGNIFICANT HAZARDS CONSIDERATION:

The Nuclear Regulatory Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazard exists due to a proposed amendment to an Operating License for a facility. A proposed amendment involves no significant hazards consideration if operation of the facility in accordance with the proposed changes would: (1) Not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) Not create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) Not involve a significant reduction in a margin of safety. The Davis-Besse Nuclear Power Station (DBNPS) has reviewed the proposed changes and determined that a significant hazards consideration does not exist because operation of the Davis-Besse Nuclear Power Station, Unit 1, in accordance with these changes would:

- 1a. Not involve a significant increase in the probability of an accident previously evaluated because the proposed changes do not change any accident initiator, initiating condition, or assumption.

The proposed changes would revise Technical Specification (TS) Table 3.3-11, "Steam and Feedwater Rupture Control System Instrumentation," and TS Table 4.3-11, "Steam and Feedwater Rupture Control System Instrumentation Surveillance Requirements," to identify the Steam and Feedwater Rupture Control System (SFRCS) output logic as a separate Functional Unit. In addition, the proposed changes would revise TS Table 3.3-12, "Steam and Feedwater Rupture Control System Instrumentation Trip Setpoints," to remove the "Trip Setpoint" values and also modify the "Allowable Values" entry for Functional Unit 3, "Steam Generator Feedwater Differential Pressure - High," consistent with updated calculations and current setpoint methodology, and revise the applicability of TS Allowable Values for other SFRCS Functional Units in this table. The proposed changes would also revise TS Table 4.3-11 to change the Channel Functional Test surveillance requirements for the SFRCS instrument channels from monthly to quarterly, consistent with current methodology. The proposed changes would also make related administrative changes to TS Limiting Condition for Operation (LCO) 3.3.2.2, TS Table 3.3-17, "Anticipatory Reactor Trip System Instrumentation," TS Table 3.3-6, "Radiation Monitoring Instrumentation," and the associated TS Bases.

These proposed changes do not involve a significant change to plant design or operation.

- 1b. Not involve a significant increase in the consequences of an accident previously evaluated because the proposed changes do not invalidate assumptions used in evaluating the radiological consequences of an accident, do not alter the source term or containment isolation, and do not provide a new radiation release path or alter radiological consequences.
2. Not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed changes do not introduce a new or different accident initiator or introduce a new or different equipment failure mode or mechanism.
3. Not involve a significant reduction in a margin of safety as defined in the basis for any Technical Specification. The SFRCS instrumentation setpoint analyses will continue to adequately preserve the margin of safety. In addition, there are no new or significant changes to the initial conditions contributing to accident severity or consequences. Therefore, there are no significant reductions in a margin of safety.

CONCLUSION:

On the basis of the above, the Davis-Besse Nuclear Power Station (DBNPS) has determined that the License Amendment Request does not involve a significant hazards consideration. As this License Amendment Request concerns a proposed change to the Technical Specifications that must be reviewed by the Nuclear Regulatory Commission, this License Amendment Request does not constitute an unreviewed safety question.

ATTACHMENTS:

Attached are the proposed marked-up changes to the Operating License.

REFERENCES:

1. DBNPS Operating License NPF-3, Appendix A Technical Specifications through Amendment 246.
2. DBNPS Updated Safety Analysis Report through Revision 22.
3. NUREG-1430, "Standard Technical Specifications Babcock and Wilcox Plants," Revision 2, April 2001.
4. EPRI TR-103335-R1, "Guidelines for Instrument Calibration Extension/Reduction – Revision 1, Statistical Analysis of Instrument Calibration Data," Final Report, October 1998.

5. DBNPS Calculations:

C-ICE-058.01-001, "RCPM Monitor Setpoint for Loss of a Reactor Coolant Pump," Revision 3.

C-ICE-083.03-001, "SFRCS Low and High Level Setpoints," Revision 12.

C-ICE-083.03-003, "Setpoint Determination for SFRCS Low Pressure Trip Switches," Revision 5.

C-ICE-083.03-004, "Setpoint Determination for SFRCS Differential Pressure Trip Switches," Revision 3.

6. NRC Regulatory Guide (RG) 1.105, "Setpoints for Safety-Related Systems," Revision 3, December 1999.

7. Instrument Society of America Standards:

ISA-RP67.04, Part II, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation," September 1994.

ISA-S67.04, "Setpoints for Nuclear Safety-Related Instrumentation," September 1994.

INSTRUMENTATIONSTEAM AND FEEDWATER RUPTURE CONTROL SYSTEM INSTRUMENTATIONLIMITING CONDITION FOR OPERATION

3.3.2.2 The Steam and Feedwater Rupture Control System (SFRCS) instrumentation channels shown in Table 3.3-11 shall be OPERABLE with their trip setpoints set consistent with the values shown in the ~~Trip Setpoint~~Allowable Values column of Table 3.3-12, with the exception of the ~~Steam Generator Level-Low Functional Unit~~ which shall be set consistent with the ~~Allowable Value~~ column of Table 3.3-12.

APPLICABILITY: MODES 1, 2 and 3.

ADDITIONAL CHANGES PREVIOUSLY PROPOSED BY LETTER	
Serial No. <u>2625</u>	Date <u>4/1/01</u>

ACTION:

- a. With a SFRCS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-12, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-11, until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with Table 3.3-12.
- b. With a SFRCS instrumentation channel inoperable, take the action shown in Table 3.3-11.

SURVEILLANCE REQUIREMENTS

4.3.2.2.1 Each SFRCS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST during the MODES and at the frequencies shown in Table 4.3-11.

4.3.2.2.2 The logic for the bypasses shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The total bypass function shall be demonstrated OPERABLE at least once per REFUELING INTERVAL during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.2.2.3 The STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM RESPONSE TIME* of each SFRCS function shall be demonstrated to be within the limit at least once per REFUELING INTERVAL. Each test shall include at least one channel per function such that all channels are tested at least once every N times the REFUELING INTERVAL where N is the total number of redundant channels in a specific SFRCS function as shown in the "Total No. of Channels" Column of Table 3.3-11.

* The Main Steam Isolation Valves (MSIVs) response time is to be the time elapsed from the monitored variable exceeding the trip setpoint until the MSIV is fully closed. The Turbine Stop Valves (TSVs) response time is to be the time elapsed from the main steam line low pressure trip condition until the TSV is fully closed.

TABLE 3.3-11
STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. Main Steam Pressure Low Instrument Channels*	2	1	2	16#
a. PS 3689B Steam Line 1 Channel 1				
b. PS 3689D Steam Line 2 Channel 1				
c. PS 3689F Steam Line 1 Channel 1				
d. PS 3689H Steam Line 2 Channel 1				
e. PS 3687A Steam Line 2 Channel 2				
f. PS 3687C Steam Line 1 Channel 2				
g. PS 3687E Steam Line 2 Channel 2				
h. PS 3687G Steam Line 1 Channel 2				

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DAVIS-BESSE, UNIT 1

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Amendment No. 121,135

TABLE 3.3-11 (Continued)

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
2. Feedwater/Steam Generator Differential Pressure - High Instrument Channels	2	1	2	161
a. PDS 2685A Feedwater/Steam Generator 2 Channel 2 PDS 2685B Feedwater/Steam Generator 2 Channel 2				
b. PDS 2685C Feedwater/Steam Generator 2 Channel 1 PDS 2685D Feedwater/Steam Generator 2 Channel 1				
c. PDS 2686A Feedwater/Steam Generator 1 Channel 1 PDS 2686B Feedwater/Steam Generator 1 Channel 1				
d. PDS 2686C Feedwater/Steam Generator 1 Channel 2 PDS 2686D Feedwater/Steam Generator 1 Channel 2				
3. Steam Generator Level - Low Instrument Channels	2	1	2	161
a. LSL L SP988 Steam Generator 1 Channel 1 LSL L SP989 Steam Generator 1 Channel 1				
b. LSL L SP9A6 Steam Generator 2 Channel 1 LSL L SP9A7 Steam Generator 2 Channel 1				
c. LSL L SP9A8 Steam Generator 2 Channel 2 LSL L SP9A9 Steam Generator 2 Channel 2				

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DAVIS-BESSE, UNIT 1

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Amendment No. 4, 135

TABLE 3.3-11 (Continued)

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
3. Steam Generator Level - Low Instrument Channels (continued)				
d. LSSL SP9B6 Steam Generator 1 Channel 2 LSSL SP9B7 Steam Generator 1 Channel 2				
4. Loss of RCP Channels	2	1	2	16#
<u>5. Output Logic</u>	<u>2</u>	<u>1</u>	<u>2</u>	<u>18</u>
<u>6.5. Manual Initiation (Push buttons)</u>				
a. Initiate AFPT #1	1	1	1	17
b. Initiate AFPT #2	1	1	1	17
c. Initiate AFPT #1 and Isolate SG #1	1	1	1	17
d. Initiate AFPT#2 and Isolate SG #2	1	1	1	17

DAVIS-BESSE, UNIT 1

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Amendment No. 4, 124, 135,

TABLE 3.3-11 (Continued)

TABLE NOTATION

- * May be bypassed when steam pressure is below 750 psig. Bypass shall be automatically removed when the steam pressure exceeds 800 psig.
- # The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

- ACTION 16 - With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable section of the channel is placed in the tripped condition within 1 hour.
- ACTION 17 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 18 = With any component in the Output Logic inoperable, declare the associated actuated component(s) inoperable, or place the associated actuated component(s) in the SFRCS-actuated position within one hour.

ADDITIONAL CHANGES PREVIOUSLY
PROPOSED BY LETTER
Serial No. 2625 Date 4/1/01

TABLE 3.3-12

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM
INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNITS</u>	<u>TRIP SETPOINTS</u>	<u>ALLOWABLE VALUES</u>
1. Steam Line Pressure - Low	≥ 591.6 psig	≥ 591.6 psig* ≥ 586.6 psig**
2. Steam Generator Level - Low ⁽¹⁾	N.A.	≥ 16.9 "*
3. Steam Generator Feedwater Differential Pressure - High ⁽²⁾	≤ 197.6 psid	≤ 179.2 197.6 psid* ≤ 199.6 psid**
4. Reactor Coolant Pumps - Loss of	High ≤ 1384.6 amps Low ≥ 106.5 amps	High ≤ 1384.6 amps *# Low ≥ 106.5 amps *#

(1) Actual water level above the lower steam generator tubesheet.
(2) Where differential pressure is steam generator minus feedwater pressure.

* Allowable Value for CHANNEL FUNCTIONAL TEST
~~** Allowable Value for CHANNEL CALIBRATION~~
~~# Allowable Value for CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION~~

TABLE 4.3-11

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. Instrument Channel			
a. Steam Line Pressure - Low	S	E	<u>QM</u>
b. Steam Generator Level - Low	S	R	<u>QM</u>
c. Steam Generator - Feedwater Differential Pressure - High	S	E	<u>QM</u>
d. Reactor Coolant Pumps - Loss of	S	E	<u>QM</u>
<u>2. Output Logic</u>	<u>NA</u>	<u>NA</u>	<u>M</u>
<u>32. Manual Actuation</u>	NA	NA	R

DAVIS-BESSE, UNIT 1

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Amendment No. 4,43,46,135,218,

INSTRUMENTATION

ANTICIPATORY REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.3 The Anticipatory Reactor Trip System instrumentation channels of Table 3.3-17 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-17

ACTION: As shown in Table 3.3-17

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SURVEILLANCE REQUIREMENTS

4.3.2.3 The Anticipatory Reactor Trip System shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST for the modes and at the frequencies shown in Table 4.3-17.

TABLE 3.3-17

ANTICIPATORY REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Turbine Trip	4	2 ^(a)	3	1 ^(b)	<u>1918</u>
2. Trip of Both Main Feed Pump Turbines	4	2	3	1	<u>2019</u>
3. Output Logic	4	2	3	1	<u>2120</u>

(a) Trip automatically bypassed below 45 percent of RATED THERMAL POWER

(b) Applicable only above 45 percent of RATED THERMAL POWER

TABLE 3.3-17 (Continued)

ACTION STATEMENTS

- ACTION 1918 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirements, restore the inoperable channel to OPERABLE status within 72 hours or reduce reactor power to less than 45 percent of RATED THERMAL POWER within the next 6 hours.
- ACTION 2019 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirements, restore the inoperable channel to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours.
- ACTION 2120 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided both of the following conditions are satisfied:
- a) The control rod drive trip breaker associated with the inoperable channel is placed in the tripped condition within one hour.
 - b) The Minimum Channels OPERABLE requirement is met; however, one additional control rod drive trip breaker associated with another channel may be tripped for up to 2 hours for surveillance testing per Specification 4.3.2.3, after reclosing the control rod drive trip breaker opened in a) above.

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

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3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

- a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.
- b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations during the modes at the frequencies shown in Table 4.3-3.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. AREA MONITORS					
a. Fuel Storage Pool Area Emergency Ventilation System Actuation	1	**	≤ 2 × background	0.1 - 10 ⁷ mr/hr	2322
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity RCS Leakage Detection	1*	1, 2, 3, & 4	Not Applicable	10 - 10 ⁶ cpm	2224
ii. Particulate Activity RCS Leakage Detection	1*	1, 2, 3, & 4	Not Applicable	10 - 10 ⁶ cpm	2224

* As required by Specification 3.4.6.1.

**With fuel in the storage pool or building

TABLE 3.3-6 (Continued)

TABLE NOTATION

- ACTION ~~2221~~ - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1.
- ACTION ~~2322~~ - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

3/4.3 INSTRUMENTATIONBASES

ADDITIONAL CHANGES PREVIOUSLY PROPOSED BY LETTER	
Serial No. <u>2583</u> 2025	Date <u>7/26/99</u> 1/1/01

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM AND SAFETY SYSTEM INSTRUMENTATION

The OPERABILITY of the RPS, SFAS and SFRCS instrumentation systems ensure that 1) the associated action and/or trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for RPS, SFAS and SFRCS purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. The response time limits for these instrumentation systems are located in the Updated Safety Analysis Report and are used to demonstrate OPERABILITY in accordance with each system's response time surveillance requirements.

For the RPS, SFAS Table 3.3-4 Functional Unit Instrument Strings b, c, d, e, and f, and Interlock Channel a, and SFRCS Table 3.3-12 Functional Unit 2:

Only the Allowable Value is specified for each Function. Nominal trip setpoints are specified in the setpoint analysis. The nominal trip setpoints are selected to ensure the setpoints measured by CHANNEL FUNCTIONAL TESTS do not exceed the Allowable Value if the bistable is performing as required. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable provided that operation and testing are consistent with the assumptions of the specific setpoint calculations. Each Allowable Value specified is more conservative than the analytical limit assumed in the safety analysis to account for instrument uncertainties appropriate to the trip parameter. These uncertainties are defined in the specific setpoint analysis.

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Setpoints must be found within the specified Allowable Values. Any setpoint adjustment shall be consistent with the assumptions of the current specific setpoint analysis.

A CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. CHANNEL CALIBRATION shall find that measurement errors and bistable setpoint errors are within the assumptions of the setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the setpoint analysis.

The frequency is justified by the assumption of an 18 or 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

3/4.3 INSTRUMENTATIONBASES

ADDITIONAL CHANGES PREVIOUSLY PROPOSED BY LETTER Serial No. <u>2625</u> Date <u>4/1/01</u>
--

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM AND SAFETY SYSTEM
INSTRUMENTATION (Continued)

The measurement of response time at the specified frequencies provides assurance that the RPS, SFAS, and SFRCS action function associated with each channel is completed within the time limit assumed in the safety analyses.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.

The SFRCS RESPONSE TIME for the turbine stop valve closure is based on the combined response times of main steam line low pressure sensors, logic cabinet delay for main steam line low pressure signals and closure time of the turbine stop valves. This SFRCS RESPONSE TIME ensures that the auxiliary feedwater to the unaffected steam generator will not be isolated due to a SFRCS low pressure trip during a main steam line break accident.

Surveillance Requirement 4.3.2.2.3 requires demonstration that each SFRCS function can be performed within the applicable SFRCS RESPONSE TIME. When this surveillance requirement can not be met due to an inoperable SFRCS-actuated component, the LCO ACTION associated with the inoperable actuated component should be entered. When the SFRCS RESPONSE TIME surveillance requirement can not be met due to inoperable components within the SFRCS, the applicable ACTION 46-statement of Table 3.3-11 should be followed.

The actuation logic for Functional Units 4.a., 4.b., and 4.c. of Table 3.3-3, Safety Features Actuation System Instrumentation, is designed to provide protection and actuation of a single train of safety features equipment, essential bus or emergency diesel generator. Collectively, Functional Units 4.a., 4.b., and 4.c. function to detect a degraded voltage condition on either of the two 4160 volt essential buses, shed connected loads, disconnect the affected bus(es) from the offsite power source and start the associated emergency diesel generator. In addition, if an SFAS actuation signal is present under these conditions, the sequencer channels for the two SFAS channels which actuate the train of safety features equipment powered by the affected bus will automatically sequence these loads onto the bus to prevent overloading of the emergency diesel generator. Functional Unit 4.a. has a total of four units, one associated with each SFAS channel (i.e., two for each essential bus). Functional Units 4.b. and 4.c. each have a total of four units, (two associated with each essential bus); each unit consisting of two undervoltage relays and an auxiliary relay.

An SFRCS channel consists of 1) the sensing device(s), 2) associated logic and output relays, and 3) power sources. The SFRCS output signals that close the Main Feedwater Block Valves (FW-779 and FW-780) and trip the Anticipatory Reactor Trip System (ARTS) are not required to mitigate any accident and are not credited in any safety analysis. Therefore, LCO 3.3.2.2 does not apply to these functions.

The quarterly (Q) CHANNEL FUNCTIONAL TEST interval for the SFRCS Instrument Channels is based on a statistical analysis of the one month functional check as-found, as-left (AFAL) setpoint data for the subject instruments as provided in EPRI TR-103335-R1, "Guidelines for Instrument Calibration Extension/Reduction-Revision 1: Statistical Analysis of Instrument Calibration Data."

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3/4.3 INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM AND SAFETY SYSTEM INSTRUMENTATION
(Continued)

Safety-grade anticipatory reactor trip is initiated by a turbine trip (above 45 percent of RATED THERMAL POWER) or trip of both main feedwater pump turbines. This anticipatory trip will operate in advance of the reactor coolant system high pressure reactor trip to reduce the peak reactor coolant system pressure and thus reduce challenges to the pilot operated relief valve. This anticipatory reactor trip system was installed to satisfy Item II.K.2.10 of NUREG-0737.

Docket Number 50-346
License Number NPF-3
Serial Number 2722
Attachment 2
Page 1

**ENVIRONMENTAL CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NUMBER 01-0005**

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

Docket Number 50-346
License Number NPF-3
Serial Number 2722
Enclosure 2

**PROPOSED TECHNICAL SPECIFICATIONS AND BASES CHANGES
REVISION BAR FORMAT**

(11 pages follow)

INSTRUMENTATION

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2.2 The Steam and Feedwater Rupture Control System (SFRCS) instrumentation channels shown in Table 3.3-11 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Allowable Values column of Table 3.3-12.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

- a. With a SFRCS instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-12, declare the channel inoperable and apply the applicable ACTION requirement of Table 3.3-11, until the channel is restored to OPERABLE status with the trip setpoint adjusted consistent with Table 3.3-12.
- b. With a SFRCS instrumentation channel inoperable, take the action shown in Table 3.3-11.

SURVEILLANCE REQUIREMENTS

4.3.2.2.1 Each SFRCS instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST during the MODES and at the frequencies shown in Table 4.3-11.

4.3.2.2.2 The logic for the bypasses shall be demonstrated OPERABLE during the at power CHANNEL FUNCTIONAL TEST of channels affected by bypass operation. The total bypass function shall be demonstrated OPERABLE at least once per REFUELING INTERVAL during CHANNEL CALIBRATION testing of each channel affected by bypass operation.

4.3.2.2.3 The STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM RESPONSE TIME* of each SFRCS function shall be demonstrated to be within the limit at least once per REFUELING INTERVAL. Each test shall include at least one channel per function such that all channels are tested at least once every N times the REFUELING INTERVAL where N is the total number of redundant channels in a specific SFRCS function as shown in the "Total No. of Channels" Column of Table 3.3-11.

* The Main Steam Isolation Valves (MSIVs) response time is to be the time elapsed from the monitored variable exceeding the trip setpoint until the MSIV is fully closed. The Turbine Stop Valves (TSVs) response time is to be the time elapsed from the main steam line low pressure trip condition until the TSV is fully closed.

TABLE 3.3-11 (Continued)

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
3. Steam Generator Level - Low Instrument Channels (continued)				
d. LSSL SP9B6 Steam Generator 1 Channel 2 LSSL SP9B7 Steam Generator 1 Channel 2				
4. Loss of RCP Channels	2	1	2	16#
5. Output Logic	2	1	2	18
6. Manual Initiation (Push buttons)				
a. Initiate AFPT #1	1	1	1	17
b. Initiate AFPT #2	1	1	1	17
c. Initiate AFPT #1 and Isolate SG #1	1	1	1	17
d. Initiate AFPT#2 and Isolate SG #2	1	1	1	17

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TABLE 3.3-11 (Continued)

TABLE NOTATION

- * May be bypassed when steam pressure is below 750 psig. Bypass shall be automatically removed when the steam pressure exceeds 800 psig.
- # The provisions of Specification 3.0.4 are not applicable.

ACTION STATEMENTS

- ACTION 16 - With the number of OPERABLE Channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed until performance of the next required CHANNEL FUNCTIONAL TEST provided the inoperable section of the channel is placed in the tripped condition within 1 hour.
- ACTION 17 - With the number of OPERABLE Channels one less than the Total Number of Channels, restore the inoperable channel to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- ACTION 18 - With any component in the Output Logic inoperable, declare the associated actuated component(s) inoperable, or place the associated actuated component(s) in the SFRCS-actuated position within one hour.

TABLE 3.3-12STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM
INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNITS</u>	<u>ALLOWABLE VALUES</u>
1. Steam Line Pressure - Low	≥ 591.6 psig*
2. Steam Generator Level - Low ⁽¹⁾	≥ 16.9 "*
3. Steam Generator Feedwater Differential Pressure - High ⁽²⁾	≤ 179.2 psid*
4. Reactor Coolant Pumps - Loss of	High ≤ 1384.6 amps * Low ≥ 106.5 amps *

(1) Actual water level above the lower steam generator tubesheet.

(2) Where differential pressure is steam generator minus feedwater pressure.

* Allowable Value for CHANNEL FUNCTIONAL TEST

TABLE 4.3-11

STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>	
1. Instrument Channel				
a. Steam Line Pressure - Low	S	E	Q	
b. Steam Generator Level - Low	S	R	Q	
c. Steam Generator - Feedwater Differential Pressure - High	S	E	Q	
d. Reactor Coolant Pumps - Loss of	S	E	Q	
2. Output Logic	NA	NA	M	
3. Manual Actuation	NA	NA	R	

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TABLE 3.3-17

ANTICIPATORY REACTOR TRIP SYSTEM INSTRUMENTATION

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NO. OF CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ACTION</u>
1. Turbine Trip	4	2 ^(a)	3	1 ^(b)	19
2. Trip of Both Main Feed Pump Turbines	4	2	3	1	20
3. Output Logic	4	2	3	1	21

(a) Trip automatically bypassed below 45 percent of RATED THERMAL POWER

(b) Applicable only above 45 percent of RATED THERMAL POWER

TABLE 3.3-17 (Continued)

ACTION STATEMENTS

- ACTION 19 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirements, restore the inoperable channel to OPERABLE status within 72 hours or reduce reactor power to less than 45 percent of RATED THERMAL POWER within the next 6 hours.
- ACTION 20 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirements, restore the inoperable channel to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours.
- ACTION 21 - With the number of OPERABLE channels one less than the Total Number of Channels, STARTUP and/or POWER OPERATION may proceed provided both of the following conditions are satisfied:
- a) The control rod drive trip breaker associated with the inoperable channel is placed in the tripped condition within one hour.
 - b) The Minimum Channels OPERABLE requirement is met; however, one additional control rod drive trip breaker associated with another channel may be tripped for up to 2 hours for surveillance testing per Specification 4.3.2.3, after reclosing the control rod drive trip breaker opened in a) above.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>ALARM/TRIP SETPOINT</u>	<u>MEASUREMENT RANGE</u>	<u>ACTION</u>
1. AREA MONITORS					
a. Fuel Storage Pool Area Emergency Ventilation System Actuation	1	**	$\leq 2 \times$ background	0.1 - 10^7 mr/hr	23
2. PROCESS MONITORS					
a. Containment					
i. Gaseous Activity RCS Leakage Detection	1*	1, 2, 3, & 4	Not Applicable	10 - 10^6 cpm	22
ii. Particulate Activity RCS Leakage Detection	1*	1, 2, 3, & 4	Not Applicable	10 - 10^6 cpm	22

* As required by Specification 3.4.6.1.

**With fuel in the storage pool or building

TABLE 3.3-6 (Continued)

TABLE NOTATION

- | | | | |
|-----------|---|---|--|
| ACTION 22 | - | With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.6.1. | |
| ACTION 23 | - | With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12. | |

3/4.3 INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM AND SAFETY SYSTEM INSTRUMENTATION

The OPERABILITY of the RPS, SFAS and SFRCS instrumentation systems ensure that 1) the associated action and/or trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for RPS, SFAS and SFRCS purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability. The response time limits for these instrumentation systems are located in the Updated Safety Analysis Report and are used to demonstrate OPERABILITY in accordance with each system's response time surveillance requirements.

For the RPS, SFAS Table 3.3-4 Functional Unit Instrument Strings b, c, d, e, and f, and Interlock Channel a, and SFRCS:

Only the Allowable Value is specified for each Function. Nominal trip setpoints are specified in the setpoint analysis. The nominal trip setpoints are selected to ensure the setpoints measured by CHANNEL FUNCTIONAL TESTS do not exceed the Allowable Value if the bistable is performing as required. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable provided that operation and testing are consistent with the assumptions of the specific setpoint calculations. Each Allowable Value specified is more conservative than the analytical limit assumed in the safety analysis to account for instrument uncertainties appropriate to the trip parameter. These uncertainties are defined in the specific setpoint analysis.

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Setpoints must be found within the specified Allowable Values. Any setpoint adjustment shall be consistent with the assumptions of the current specific setpoint analysis.

A CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. CHANNEL CALIBRATION shall find that measurement errors and bistable setpoint errors are within the assumptions of the setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the setpoint analysis.

The frequency is justified by the assumption of an 18 or 24 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

3/4.3 INSTRUMENTATION

BASES

3/4.3.1 and 3/4.3.2 REACTOR PROTECTION SYSTEM AND SAFETY SYSTEM INSTRUMENTATION (Continued)

The measurement of response time at the specified frequencies provides assurance that the RPS, SFAS, and SFRCS action function associated with each channel is completed within the time limit assumed in the safety analyses.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.

The SFRCS RESPONSE TIME for the turbine stop valve closure is based on the combined response times of main steam line low pressure sensors, logic cabinet delay for main steam line low pressure signals and closure time of the turbine stop valves. This SFRCS RESPONSE TIME ensures that the auxiliary feedwater to the unaffected steam generator will not be isolated due to a SFRCS low pressure trip during a main steam line break accident.

Surveillance Requirement 4.3.2.2.3 requires demonstration that each SFRCS function can be performed within the applicable SFRCS RESPONSE TIME. When this surveillance requirement can not be met due to an inoperable SFRCS-actuated component, the LCO ACTION associated with the inoperable actuated component should be entered. When the SFRCS RESPONSE TIME surveillance requirement can not be met due to inoperable components within the SFRCS, the applicable ACTION statement of Table 3.3-11 should be followed.

The actuation logic for Functional Units 4.a., 4.b., and 4.c. of Table 3.3-3, Safety Features Actuation System Instrumentation, is designed to provide protection and actuation of a single train of safety features equipment, essential bus or emergency diesel generator. Collectively, Functional Units 4.a., 4.b., and 4.c. function to detect a degraded voltage condition on either of the two 4160 volt essential buses, shed connected loads, disconnect the affected bus(es) from the offsite power source and start the associated emergency diesel generator. In addition, if an SFAS actuation signal is present under these conditions, the sequencer channels for the two SFAS channels which actuate the train of safety features equipment powered by the affected bus will automatically sequence these loads onto the bus to prevent overloading of the emergency diesel generator. Functional Unit 4.a. has a total of four units, one associated with each SFAS channel (i.e., two for each essential bus). Functional Units 4.b. and 4.c. each have a total of four units, (two associated with each essential bus); each unit consisting of two undervoltage relays and an auxiliary relay.

An SFRCS channel consists of 1) the sensing device(s), 2) associated logic and output relays, and 3) power sources. The SFRCS output signals that close the Main Feedwater Block Valves (FW-779 and FW-780) and trip the Anticipatory Reactor Trip System (ARTS) are not required to mitigate any accident and are not credited in any safety analysis. Therefore, LCO 3.3.2.2 does not apply to these functions.

The quarterly (Q) CHANNEL FUNCTIONAL TEST interval for the SFRCS Instrument Channels is based on a statistical analysis of the one month functional check as-found, as-left (AFAL) setpoint data for the subject instruments as provided in EPRI TR-103335-R1, "Guidelines for Instrument Calibration Extension/Reduction-Revision 1: Statistical Analysis of Instrument Calibration Data."

Docket Number 50-346
License Number NPF-3
Serial Number 2722
Enclosure 3

COMMITMENT LIST

THE FOLLOWING LIST IDENTIFIES THOSE ACTIONS COMMITTED TO BY THE DAVIS-BESSE NUCLEAR POWER STATION (DBNPS) IN THIS DOCUMENT. ANY OTHER ACTIONS DISCUSSED IN THE SUBMITTAL REPRESENT INTENDED OR PLANNED ACTIONS BY THE DBNPS. THEY ARE DESCRIBED ONLY FOR INFORMATION AND ARE NOT REGULATORY COMMITMENTS. PLEASE NOTIFY THE MANAGER – REGULATORY AFFAIRS (419-321-8450) AT THE DBNPS OF ANY QUESTIONS REGARDING THIS DOCUMENT OR ANY ASSOCIATED REGULATORY COMMITMENTS.

COMMITMENTS

1. List the SFRCS Instrumentation Channel trip setpoints in the USAR.

DUE DATE

1. No later than implementation of the requested License Amendment.