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 2390) concern:

Appendix A, Technical Specification Sections 3/4.3.2.1, Safety Features Actuation System Instrumentation, 3/4.6.1.7, Containment Systems - Containment Ventilation System, 3/4.6.3.1, Containment Systems - Containment Isolation Valves, 3/4.9.4, Refueling Operations - Containment Penetrations, and their associated Bases.

For: John K. Wood, Vice President - Nuclear

By: _____
T. J. Myers, Director DB Nuclear Support Services

Sworn to and subscribed before me this 24th day of June, 1997.

Laura A. Jennison
Notary Public, State of Ohio

LAURA A. JENNISON
Notary Public, State of Ohio
My Commission Expires 8-15-2001

The following information is provided to support issuance of the requested changes to the Davis-Besse Nuclear Power Station (DBNPS), Unit Number 1, Facility Operating License Number NPF-3, Appendix A, Technical Specifications. The changes involve Technical Specifications (TS) 3/4.3.2.1, Safety Features Actuation System Instrumentation, 3/4.6.1.7, Containment Systems - Containment Ventilation System, 3/4.6.3.1, Containment Systems - Containment Isolation Valves, 3/4.9.4, Refueling Operations - Containment Penetrations, and their associated Bases.

A. Time Required to Implement: This change is to be implemented within 90 days after the NRC issuance of the License Amendment.

B. Reason for Change (License Amendment Request Number 95-0026):

This application would remove the TS requirement for a Safety Features Actuation System containment isolation actuation on high containment radiation. This would allow removal of the radiation monitors (RE's) required for this function, thereby eliminating their maintenance and surveillance testing requirements.

Associated with the above changes, this application would: require that the containment purge and exhaust isolation valves be maintained closed with control power removed in Mode 1 through Mode 4; delete the TS requirement of verifying that each purge and exhaust automatic valve actuates to its isolation position on an isolation test signal; remove purge valve closure time TS requirements; remove the TS option of using the Safety Features Actuation System RE's for containment isolation during refueling operations; and revise the applicable TS Bases.

This change is being submitted to the NRC as a Cost Beneficial Licensing Action (CBLA). This change will not adversely impact safety and will eliminate RE maintenance and surveillance testing costs, with a potential savings of approximately $320,000 over the DBNPS's remaining life.

C. Safety Assessment and Significant Hazards Consideration: See Attachment

Docket Number 50-346
License Number NPF-3
Serial Number 2390
Attachment

SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION
FOR
LICENSE AMENDMENT REQUEST NO. 95-0026

(43 pages follow)

SAFETY ASSESSMENT AND SIGNIFICANT HAZARDS CONSIDERATION FOR LICENSE AMENDMENT REQUEST NO. 95-0026

TITLE:

Proposed Modification to the Davis-Besse Nuclear Power Station, Unit Number 1, Facility Operating License NPF-3, Appendix A Technical Specifications to Delete the Requirements for Safety Features Actuation System Containment High Radiation Monitors.

DESCRIPTION:

The purpose of the proposed changes is to modify the Davis-Besse Nuclear Power Station (DBNPS) Operating License NPF-3, Appendix A, Technical Specifications (TS) and the associated Bases. The proposed changes would: eliminate the TS requirements for a Safety Features Actuation System (SFAS) containment (CTMT) isolation actuation on high CTMT radiation; require that the containment purge and exhaust isolation valves be maintained closed with control power removed in Mode 1 through Mode 4; delete the TS requirement of verifying that each purge and exhaust automatic valve actuates to its isolation position on an isolation test signal; remove purge valve closure time TS requirements; remove the TS option of using the Safety Features Actuation System RE's for containment isolation during refueling operations; and revise the applicable TS Bases.

The proposed changes would allow elimination of the four CTMT radiation monitors (RE's 2004, 2005, 2006 and 2007), thereby also eliminating their maintenance and surveillance testing requirements. As described in greater detail below, these monitors provide an alternate means of isolating the containment during normal operation. With elimination of these monitors, diverse means for automatically isolating the containment in Mode 1 (Power Operation) through Mode 3 (Hot Standby) by SFAS would still be available via the monitored parameters of CTMT pressure and Reactor Coolant System pressure.

As also described in greater detail below, although the current Technical Specifications allow the CTMT Purge System to be operated in the CTMT purge mode for limited time periods during normal operation, the DBNPS has previously committed to the NRC (Reference letters dated December 30, 1982 and June 24, 1988, Toledo Edison Serial Numbers 890 and 1504, respectively) to maintain the CTMT purge and exhaust isolation valves closed with control power removed during Mode 1 (Power Operation) through Mode 4 (Hot Shutdown). Therefore, the proposed changes would bring the applicable Technical Specification into agreement with this commitment.

These proposed changes are being submitted to the Nuclear Regulatory Commission (NRC) as a Cost Beneficial Licensing Action (CBLA). The elimination of surveillance and maintenance costs associated with the SFAS RE's would provide for a potential cost savings of approximately $320,000 over the DBNPS's remaining life. As discussed in the following, these proposed changes will not adversely affect safety.

The proposed changes are described in further detail as follows:

TS 3/4.3.2.1, Safety Features Actuation System Instrumentation

In TS Table 3.3-3, "Safety Features Actuation System Instrumentation," the proposed changes would: delete Functional Unit 1.a., "Containment Radiation - High" from the "Instrument Strings" requirements; delete the Mode 6 applicability for Functional Unit 2.a., "Output Logic," and Functional Unit 3.a., "Manual Actuation;" and delete Table Notation footnote "****" associated with Mode 6 operability.

In TS Table 3.3-4, "Safety Features Actuation System Instrumentation Trip Setpoints," the proposed changes would delete Functional Unit a., "Containment Radiation", from the "Instrument Strings" requirements.

In TS Table 3.3-5, "Safety Features System Response Times," the proposed changes would delete the "Containment Purge" response time requirement from the "HV & AC Isolation Valves" category for the "Manual," "Containment Pressure - High," and "RCS Pressure - Low" "Initiating Signals and Functions," and would delete all response time requirements for the "Initiating Signal and Function" of "Containment Radiation - High." In addition, an editorial correction would be made to correct the misspelled word "Response" in the title of the first page of the table (TS Page 3/4 3-14).

In TS Table 4.3-2, "Safety Features Actuation System Instrumentation Surveillance Requirements," the proposed changes would: delete Functional Unit 1.a., "Containment Radiation - High," from the "Instrument Strings" requirements; delete the Mode 6 applicability for Functional Unit 2.a., "Output Logic," and Functional Unit 3.a., "Manual Actuation;" and delete Table Notation footnote "#" associated with Mode 6 operability.

TS 3/4.6.1.7, Containment Systems - Containment Ventilation System

The proposed changes would: revise the Limiting Condition for Operation (LCO) to require that the CTMT purge supply and exhaust isolation valves be closed with control power removed; revise the LCO Action statement and the Surveillance Requirements to remove any TS allowance for CTMT purge and exhaust system operation during Modes 1 through 4; and revise the LCO Action statement to include verification and shutdown requirements. In addition, the Surveillance Requirements would be modified to be consistent with the proposed LCO.

TS LCO 3.6.1.7 would read as follows:

> The containment purge supply and exhaust isolation valves shall be closed with control power removed.

TS Action 3.6.1.7 would read as follows:

> With one isolation valve open in a containment purge supply and/or exhaust penetration, or with its control power not removed, verify that the remaining containment purge supply and exhaust isolation valves are closed with control power removed by performing Surveillance Requirement 4.6.1.7 within 4 hours.
>
> Close the open containment purge supply and/or exhaust isolation valve and verify control power is removed within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

TS SR 4.6.1.7 would read as follows:

> At least once per 31 days verify that each containment purge supply and exhaust isolation valve is closed with control power removed.

Bases 3/4.6.1.7, Containment Ventilation System

Consistent with the proposed changes to TS 3/4.6.1.7, Bases 3/4.6.1.7, "Containment Ventilation System," would be modified by replacing the current Bases with the following:

> Maintaining the containment purge supply and exhaust isolation valves closed with control power removed at all times during MODES 1, 2, 3 and 4 provides assurance that the safety function of containment isolation is maintained in the event of a LOCA.
>
> The ACTION statement assures that at least one containment purge supply and exhaust isolation valve is closed in each containment penetration and provides reasonable time to permit closure of an open valve.

TS 3/4.6.3.1, Containment Systems - Containment Isolation Valves

The proposed change would delete Surveillance Requirement (SR) 4.6.3.1.2.b, which presently requires periodic verification that each purge and exhaust automatic valve actuates to its isolation position upon receipt of a containment purge and exhaust isolation test signal.

Bases 3/4.6.3, Containment Isolation Valves

Associated with the proposed changes to TS 3/4.6.1.7 and TS 3/4.6.3.1, Bases 3/4.6.3 would be modified to include a second paragraph, to read as follows:

> The containment purge and exhaust system isolation valves are considered OPERABLE with respect to containment isolation when they meet the requirements of Specification 3.6.1.7.

TS 3/4.9.4, Refueling Operations - Containment Penetrations

The proposed changes would clarify TS LCO 3.9.4.c.2. The proposed changes would also revise TS Action statement 3.9.4.b to ensure that the CTMT purge supply and exhaust isolation valves are closed when the requirements of Specification 3.9.4.c.2 are not satisfied, and delete from SR 4.9.4.b the option for using the SFAS RE's for CTMT isolation during core alterations or movement of irradiated fuel within the containment.

TS LCO 3.9.4.c.2 would read as follows:

> Be capable of being closed from the control room by an OPERABLE containment purge and exhaust isolation valve upon receipt of a high radiation signal from the containment purge and exhaust system noble gas monitor.

TS Action statement 3.9.4.b would read as follows:

> With the requirements of Specification 3.9.4.c not satisfied for the containment purge and exhaust system, close at least one of the isolation valves for each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere within one hour.

TS SR 4.9.4.b would read as follows:

> Verifying that with the containment purge and exhaust system in operation, and the containment purge and exhaust system noble gas monitor capable of providing a high radiation signal to the control room, that after initiation of the high radiation signal, the containment purge and exhaust isolation valves can be closed from the control room.

Bases 3/4.9.4, Containment Penetrations

Associated with the proposed changes to TS 3/4.9.4, Bases 3/4.9.4 would be modified to discuss the reasons for the requirements of Specification 3.9.4.c, and to delete the discussion of the use of the SFAS RE's for containment isolation. The last paragraph of Bases 3/4.9.4 would be replaced with the following:

> With the containment purge and exhaust system not in operation, there would be no flow to the containment purge and exhaust system noble gas monitor, hence the requirements of Specification 3.9.4.c.2 would not be satisfied. In this situation, unless Specification 3.9.4.c.1 is satisfied, entry into the Action statement would be required.
>
> With a containment purge penetration not capable of being closed from the control room by an OPERABLE containment purge and exhaust isolation valve upon receipt of a high radiation signal from the containment purge and exhaust system noble gas monitor, closure of

the containment purge and exhaust penetrations with at least one isolation valve ensures that the uncontrolled release of radioactive material from the containment to the environment will be restricted.

Each of the proposed changes is shown on the attached marked-up Operating License pages.

SYSTEMS, COMPONENTS, AND ACTIVITIES AFFECTED:

The affected systems, components, and activities are the Safety Features Actuation System (SFAS), including the SFAS radiation monitors and their associated Containment (CTMT) high radiation actuation. Also affected are the CTMT purge and exhaust system, including the CTMT purge supply and exhaust isolation valves, and including their associated CTMT closure function during refueling operations.

FUNCTIONS OF THE AFFECTED SYSTEMS, COMPONENTS, AND ACTIVITIES:

Safety Features Actuation System

As described in the DBNPS Updated Safety Analysis Report (USAR), Section 7.3, "Safety Features Actuation System (SFAS)," the function of the SFAS is to automatically prevent or limit fission product and energy release from the core, to isolate the containment vessel, and to initiate operation of the Engineered Safety Features (ESF) equipment in the event of a loss-of-coolant-accident (LOCA). The SFAS consists of four redundant sensing and logic channels and two redundant actuation channels.

Section 3 of IEEE Standard 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations," requires that a specific design basis be provided for the protection system, to include, but not limited to, a description of the generating station conditions which require protective action, and a description of the generating station variables that are required to be monitored in order to provide protective actions. USAR Section 7.3.1.4, "Design Basis," states that the design basis information of the SFAS, as required by Section 3 of IEEE 279-1971, are as follows:

1. Generating station conditions which require protective actions:

   a. Loss of coolant accident (LOCA)

   b. Steam line break

   c. High radiation level inside the containment vessel

2. Generating station variables that are required to be monitored in order to provide protective actions:

   a. Containment Vessel (CV) radiation

b. CV pressure

c. RC pressure

d. Borated Water Storage Tank (BWST) level

Section 6.2.4, "Containment Isolation System" of NUREG-0136, "Safety Evaluation for the Davis-Besse Nuclear Power Station," dated December 1976, states:

> Containment isolation will occur automatically upon the receipt of containment high pressure signal or reactor coolant system low pressure signal from the safety features actuation system. High radiation signals will also be used to isolate the containment vessel purge system lines.

As can be inferred from the above, containment isolation relies upon the receipt of a containment high pressure signal or reactor coolant system low pressure signal from the SFAS. A high radiation signal was identified only as another means by which to close the CTMT purge system lines.

The SFAS high containment radiation signal is currently required to be operable in Mode 1 (Power Operation) through Mode 4 (Hot Shutdown), as well as in Mode 6 (Refueling) if an alternate means of isolating CTMT is not being relied upon.

The SFAS provides CTMT isolation signals on CTMT high/high-high pressure and on RCS low/low-low pressure. These trip signals and associated instruments are required to be operable in Mode 1 (Power Operation) through Mode 3 (Hot Standby).

In accordance with TS 3/4.3.2.1, the RCS low/low-low pressure trip functions may be bypassed in Mode 3 to permit heat-up or cooldown of the plant. The RCS low pressure trip function may be bypassed in Mode 3 when RCS pressure is below 1800 psig. The RCS low-low pressure trip function may be bypassed in Mode 3 when RCS pressure is below 600 psig. (Note: The DBNPS plans to submit a separate License Amendment Request, LAR 96-0014, which will propose that the RCS low-low pressure bypass be increased. This proposed change is unrelated to LAR 95-0026.) These bypasses are automatically reset as RCS pressure exceeds 600 and 1800 psig. Therefore, during the short period of time that these bypasses are activated in Mode 3, CTMT isolation is only automatically initiated by the CTMT high/high-high pressure trips. In Mode 4, when neither the RCS pressure trips nor the CTMT pressure trips are required operable by TS 3/4.3.2.1, the SFAS radiation monitors presently provide automatic initiation of the SFAS Level 1 actions, which consist of starting Emergency Ventilation System (EVS) fans, stopping Control Room normal ventilation, and closing the CTMT purge and exhaust isolation valves (CV 5005, CV 5006, CV 5007, CV 5008 in Figure 1), Mechanical Penetration Room (MPR) purge isolation valves (CV 5004, CV 5009, CV 5016, CV 5021 in Figure 1), Emergency Ventilation isolation valves, ECCS Room isolation valves/dampers from the Auxiliary Building Radwaste ventilation, and the CTMT air sample isolation valves.

It is important to note, in considering this license amendment request, that an SFAS high radiation signal, without a coincident high CTMT pressure or low RCS pressure signal, will not provide CTMT isolation other than closure of the CTMT purge and exhaust isolation valves and the ten CTMT air sample isolation valves (CV5010 A through E and CV 5011A through E). These CTMT air sample isolation valves facilitate flow paths following a LOCA for hydrogen analyzers, radiation monitors, or a post-accident gas sample pump. The SFAS high CTMT pressure or low RCS pressure signal will actuate the same components as the high radiation signal in addition to isolating containment and initiating ESF equipment.

The SFAS RE's are ionization chamber type detectors. They are physically located in the annulus between the Shield Building and the CTMT Vessel during Modes 1 through 4. The SFAS RE's provide a radiation input signal to the SFAS cabinets for Containment Radiation - High, SFAS actuation. The signal also provides SFAS cabinet and Control Room instrumentation CTMT radiation level indication. The SFAS RE's provide no other safety related functions and are not used for post-accident monitoring or leak detection.

The SFAS is not required to be operable in Mode 5 (Cold Shutdown). In Mode 6 (Refueling) during fuel handling operations in the containment when the CTMT Purge System noble gas monitor (RE 5052C) is not available and the CTMT Purge System is in operation, the SFAS RE's (Functional Unit 1.a. in TS Table 3.3-3), the Level 1 Containment Isolation Output Logic (Functional Unit 2.a. in TS Table 3.3-3), and the Manual Actuation (Functional Unit 3.a. in TS Table 3.3-3) are currently required to be operable. The SFAS RE's are relocated to the refueling area of containment to increase their response sensitivity for fuel handling accident monitoring. Under these circumstances, the SFAS will provide CTMT isolation following a fuel handling accident inside containment, align and start the EVS, and complete the functions for a high radiation signal as discussed above.

Containment Purge System

The Containment Purge System is described in DBNPS USAR Section 6.2.3, "Containment Vessel Air Purification and Cleanup Systems." The CTMT Purge System (i.e., the containment purge and exhaust system) provides fresh outside air to the Auxiliary Building MPRs during Modes 1 through 4 and to CTMT in Modes 5 and 6. The CTMT Purge System as a whole does not provide any safety related function. However, the CTMT purge supply and exhaust isolation valves (CV 5005, CV 5006, CV 5007, CV 5008 in Figure 1) do provide CTMT isolation in the event of a radiation release or pressurization of CTMT from a design basis accident. The CTMT purge and exhaust isolation valves are 48-inch butterfly valves with air-operated actuators. The MPR purge isolation valves (CV 5004, CV 5016, CV 5009, and CV 5021 in Figure 1) are also required to close for a design basis accident to ensure the capability of the EVS by establishing part of the negative pressure boundary.

Although TS 3/4.6.1.7 currently allows the CTMT Purge System to be operated in the CTMT purge mode during Modes 1 through 4 for up to 90 hours a year, the DBNPS has previously committed to the NRC to require the CTMT purge and exhaust isolation valves to be closed with control power removed during Modes 1 through 4. This commitment is associated with the requirements of Item II.E.4.2(6) in NUREG-0737, "Clarification of TMI Action Plan Requirements."

The CTMT Purge System may also be used to fulfill the requirements for monitoring fuel handling activities and providing system shutdown in the event of a fuel handling accident. This is accomplished by monitoring the CTMT purge exhaust to the station vent. Upon receiving a high radiation signal on the associated noble gas monitor (RE 5052C in Figure 1), the CTMT purge system supply and exhaust fans trip and the CTMT purge supply and exhaust dampers close (CV 5003A, CV 5003B, CV 5013, CV 5062 in Figure 1). The high radiation signal also causes the EVS containment purge exhaust damper to open (CV 5061 in Figure 1). The high radiation signal on the noble gas monitor does not automatically close the CTMT purge supply and exhaust isolation valves or start EVS. Operator action is relied upon to establish CTMT isolation and start EVS. If the CTMT Purge System is in operation and the noble gas monitor is not operable during fuel handling operations, then the SFAS RE's, SFAS high radiation actuation, and SFAS manual actuation are currently required to be operable for fuel handling, or core alterations and fuel movement inside containment are required to be suspended.

Containment Closure During Refueling Operations

In accordance with TS 3/4.3.2.1 and TS 3/4.9.4, either the CTMT purge and exhaust system noble gas monitor or the SFAS RE's are currently required to be operable during core alterations and handling of irradiated fuel within the containment (if the purge and exhaust valves are not closed).

If the CTMT Purge System is in operation and the associated noble gas monitor is operable and being relied upon during core alterations and movement of irradiated fuel in the containment, the SFAS is not required to be operable. As described above, upon receiving a high noble gas signal, the CTMT purge system supply and exhaust fans trip and the CTMT purge supply and exhaust dampers close (CV 5003A, CV 5003B, CV 5013 and CV 5062 in Figure 1). The high radiation signal also causes the EVS containment purge exhaust damper to open (CV 5061 in Figure 1). The high noble gas signal (RE 5052C) does not automatically close the CTMT purge and exhaust isolation valves or start EVS. The Control Room operators would be required to establish CTMT isolation and start EVS.

The option to use the CTMT Purge System and associated noble gas radiation monitor (RE 5052C) in lieu of the SFAS radiation monitors to establish containment closure during refueling operations in the event of a fuel handling accident, was approved by the NRC under Amendment No. 186 to Facility Operating License No. NPF-3, for the Davis-Besse Nuclear Power Station, dated April 15, 1994.

EFFECTS ON SAFETY:

TS 3/4.3.2.1, Safety Features Actuation System Instrumentation

The proposed changes to TS 3/4.3.2.1 Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2 would: delete "Containment Radiation - High" from the "Instrument Strings" requirements; delete the Mode 6 applicability for "Output Logic" and "Manual Actuation"; delete the Mode 6 associated footnote; delete the response time requirements for the CTMT purge isolation valves for the "Manual," "CTMT Pressure - High," and "RCS Pressure - Low" "Initiating Signals and Function"; and delete all response time requirements for the "Initiating Signal and Function" of "CTMT Radiation - High."

As discussed below, these proposed changes to TS 3/4.3.2.1 are acceptable because the SFAS RE's are not needed for SFAS containment isolation diversity requirements, the CTMT purge and exhaust isolation valves will be maintained in a closed, de-powered position during Modes 1 through 4, and the SFAS RE's are not needed for initiating CTMT closure of purge and exhaust isolation valves in Mode 6, with the containment purge and exhaust system noble gas monitor available as required by TS 3/4.9.4.

NUREG-0737, "Clarification of the TMI Action Plan Requirements," Item II.E.4.2, "Containment Isolation Dependability," Position (1), states:

> Containment isolation system designs shall comply with the recommendations of Standard Review Plan Section 6.2.4 (i.e., that there be diversity in the parameters sensed for the initiation of containment isolation).

Sections 6.2.4.II.6.l and 6.2.4.II.6.m of the Standard Review Plan (NUREG-0800) state that there should be diversity in the parameters sensed for the initiation of containment isolation, that system lines which provide an open path from containment to the environs should be equipped with radiation monitors that are capable of isolating these lines upon a high radiation signal, and that the high radiation signal should not be considered one of the diverse containment isolation parameters. As was discussed previously, NUREG-0136, "Safety Evaluation for the Davis-Besse Nuclear Power Station," dated December, 1976, identifies the high radiation signal as specific to the isolation of the containment vessel purge system lines.

The Safety Evaluation for Amendment No. 37 to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, dated March 24, 1981, (Proposed Changes to the Technical Specifications based on TMI-2 Lessons Learned) states:

> The licensee currently has containment isolation system design so that diverse parameters will be sensed to ensure automatic isolation of non-essential systems under postulated accident conditions. These parameters are low reactor coolant system pressure and high containment pressure.

Further, NUREG-0737, Item II.E.4.2, Position (6), requires that CTMT purge isolation valves that do not meet the operability criteria of the Branch Technical Position (BTP) Containment Systems Branch (CSB) 6-4 must be sealed closed as defined in SRP 6.2.4 Item II.3.f during Modes 1, 2, 3, and 4. Furthermore, these valves must be verified to be closed at least every 31 days. Item II.E.4.2, Position (7), requires that open CTMT purge and vent isolation valves must close on a high radiation signal. The "Clarification" section of NUREG-0737, Item II.E.4.2(7) states that sealed-closed purge isolation valves shall be under administrative control to assure that they can not be inadvertently opened, and that administrative controls includes mechanical devices to seal or lock the valve closed, or to prevent power from being supplied to the valve operator.

Since the DBNPS CTMT purge and exhaust isolation valves have not been demonstrated to meet the operability criteria of BTP CSB 6-4 in accordance with the requirements of NUREG-0737, Item II.E.4.2.(6) and SRP 6.2.4, these valves are currently maintained closed in Modes 1 through 4, with control power removed.

Toledo Edison and the NRC have previously discussed and closed out the requirements of NUREG-0737, Items II.E.4.2 positions (6) and (7). These items were closed in the NRC's Safety Evaluation for Amendment No. 73 to Facility Operating License No. NPF-3, for the Davis-Besse Nuclear Power Station, dated July 25, 1984. The Safety Evaluation confirms that the actions of TS 3.6.3.1.b of maintaining the CTMT purge and exhaust valves closed are applicable for compliance with NUREG-0737.

Since DBNPS commitments for closing and removing power from the CTMT purge and exhaust isolation valves have been met, and the associated proposed change to TS 3/4.6.1.7 deletes the capability of operating these valves in Modes 1 through 4 and requires that they be closed with control power removed, the requirement for SFAS isolation of CTMT purge and exhaust valves on high radiation is no longer required. Therefore, the SFAS RE's and their function for generating a high radiation containment isolation actuation signal are also no longer required.

The SFAS design basis requirements, as discussed in USAR Section 7.3.1.1, regarding generating system conditions which require protective actions (including high radiation level inside the containment vessel), and generating station variables that are required to be monitored in order to provide protective actions (including containment radiation), are modified by the proposed change to TS 3/4.6.1.7. The closed CTMT purge and exhaust isolation valves with control power removed eliminate the design basis requirements for SFAS monitoring of CTMT radiation and SFAS protective actions for high radiation levels inside CTMT.

Removal of the SFAS RE's, the SFAS Level 1 Actuation on high containment radiation, and the requirement for the CTMT purge and exhaust isolation valves to close on a high radiation signal in Modes 1 through 4, does not adversely affect plant safety because the valves will be closed with control power removed. In addition, removal of the SFAS RE's and their indications from the control room will not adversely affect the plant.

With the SFAS RE's removed from service, adequate normal and accident range radiation monitoring and control room indication is provided by other Technical Specification-required equipment. Specifically, at least one gaseous activity monitoring channel and one particulate activity monitoring channel are required operable in accordance with TS 3/4.3.3.1, "Radiation Monitoring Instrumentation," and TS 3/4.4.6.1, "Reactor Coolant System Leakage - Leakage Detection Systems" during Modes 1 through 4, and at least two CTMT vessel post-accident radiation monitors are required operable in accordance with TS 3/4.3.3.6, "Post-Accident Monitoring Instrumentation," during Modes 1 through 3.

A LOCA will be detected by the Low RCS pressure or High Containment Pressure instrumentation. These signals provide the diversity required by NUREG-0800 Sections 6.2.4.II.6.l and 6.2.4.II.6.m, and have been identified as the signals credited for CTMT isolation during postulated accidents. The current LCO requirements for the equipment functions and response times of Table 3.3-5, Item 6, "Containment Radiation - High," are currently included in the equipment functions and response times of Table 3.3-5, Item 2, "Containment Pressure - High," and Item 4, "RCS Pressure - Low."

During Modes 1 and 2 and partially in Mode 3, CTMT isolation is assured by the diverse SFAS RCS and CTMT pressure trip functions. During Mode 3, when the RCS pressure is below 1800 psig, the low RCS pressure trip may be manually bypassed, and when the RCS pressure is below 600 psig, the low-low pressure trip may be manually bypassed. During the short period of time that these bypasses are activated in Mode 3, CTMT isolation is only automatically initiated by the CTMT high/high-high pressure trips. In Mode 4, when neither the RCS pressure or the CTMT pressure trips are required operable by TS 3/4.3.2.1, there will be no automatic actuation capability from SFAS. Prior to this license amendment, in Modes 1 through 4, the SFAS radiation monitors would provide automatic initiation of the SFAS Level 1 actions, which consist of starting EVS fans, stopping Control Room normal ventilation, and closing the CTMT purge and exhaust isolation valves, MPR purge isolation valves, Emergency Ventilation isolation valves, ECCS Room isolation valves/dampers from the Auxiliary Building Radwaste ventilation, and the CTMT air sample isolation valves. This reduction of automatic actuation requirements is considered acceptable since major paths from CTMT will be isolated via the required closed CTMT purge and exhaust isolation valves, the time during which the plant operates in Mode 3 with SFAS low/low-low RCS pressure bypassed and in Mode 4 is minimal, the RCS stored energy levels are reduced in these conditions (allowing greater time allowances for initiation of protective actions), the ten CTMT air sample lines are minor pathways (1 inch diameter CTMT penetrations) which are required to be opened post-LOCA, and sufficient instrumentation and equipment exists to allow the operator to initiate protective actions (SFAS manual initiation capability is still required operable through Mode 4).

Based on the above discussion, the changes to TS 3/4.3.2.1, "Safety Features Actuation System Instrumentation," Tables 3.3-3, 3.3-4, 3.3-5, and 4.3-2, involving SFAS requirements in Modes 1 through 4, will not adversely affect nuclear safety. The effects on safety of the changes involving SFAS requirements in Mode 6 are addressed below.

The editorial correction proposed to be made to correct the misspelled word "Response" in the title of Table 3.3-5 is an administrative change and will have no adverse effect on nuclear safety.

TS 3/4.6.1.7, Containment Systems - Containment Ventilation System

The proposed change to TS 3/4.6.1.7 would require that control power be removed from the containment purge supply and exhaust isolation valves in addition to verifying they are closed. The proposed change would remove any allowance for CTMT Purge System operation during Modes 1 through 4 from the Action statement. The Action statement would be modified to ensure that with one valve in a penetration not closed with control power removed, CTMT isolation of the remaining purge supply and exhaust valves in Modes 1 through 4 is verified within 4 hours and that the valve is returned to closed with control power removed. These requirements are more restrictive than the current Technical Specifications for CTMT isolation valves (TS 3/4.6.3.1) and NUREG-1430, "Improved Standard Technical Specifications for Babcock and Wilcox Pressurized Water Reactors," Revision 1. The allowance of 4 hours to perform a verification of all the remaining CTMT purge supply and exhaust valves (CV 5005, CV 5006, CV 5007, and CV 5008) allows a reasonable time to perform a verification of valve status. The allowance of 24 hours to close an open CTMT purge supply or exhaust isolation valve and verify the removal of control power allows for completion of this action, following the above valve status verification.

The CTMT purge supply and exhaust isolation valves are required to be closed for all postulated accidents. Verifying that the valves are closed with power removed is consistent with current commitments to the NRC and does not adversely affect the safety function of the system. Removing the capability of operating CTMT purge during Modes 1 through 4 ensures that no CTMT isolation function is required for the CTMT purge isolation valves.

These proposed changes to TS 3/4.6.1.7 will not adversely affect nuclear safety because the changes ensure that CTMT isolation requirements for the CTMT purge supply and exhaust isolation valves are verified.

Bases 3/4.6.1.7, Containment Ventilation System

The proposed change to Bases 3/4.6.1.7 deletes the discussion on the use of the CTMT Purge System and states that having the valves closed with control power removed meets their safety function, which is to be closed under accident conditions. Therefore, the proposed change to the Bases does not adversely affect nuclear safety.

TS 3/4.6.3.1, Containment Systems - Containment Isolation Valves

The proposed change to SR 4.6.3.1.2.b deletes the requirement for testing and verifying that the CTMT purge supply and exhaust isolation valves actuate to their isolation position. Removing this requirement does not adversely affect nuclear safety because the incorporation of the other proposed changes requires the valves to be closed with control power

removed. This removes the need for testing because these valves will always be closed in Modes 1 through 4 and will not be required to isolate on an actuation signal.

Leak rate testing of the CTMT purge supply and exhaust valves in accordance with TS 3/4.6.1.2, "Containment Systems - Containment Leakage" is not affected by the proposed revisions.

Bases 3/4.6.3, Containment Isolation Valves

The proposed change to Bases 3/4.6.3, which incorporates a discussion that the CTMT purge supply and exhaust isolation valves are considered operable with respect to containment isolation when they meet the requirements of Specification 3.6.1.7, is an administrative clarification associated with the other proposed changes, and does not affect nuclear safety.

TS 3/4.9.4, Refueling Operations - Containment Penetrations

The proposed changes to TS 3/4.9.4 clarify the requirements for CTMT purge and exhaust system penetration isolation capability and delete use of the SFAS RE's for CTMT isolation during core alterations or handling of irradiated fuel in the containment. These changes, in addition to the associated changes to TS Tables 3.3-3 and 4.3-2 involving SFAS requirements in Mode 6 (during core alterations or movement of irradiated fuel within the CTMT), do not adversely affect nuclear safety because the specification still requires the CTMT purge and exhaust isolation valves to be operable and capable of being closed, if the associated CTMT penetration is not isolated. The SFAS RE's are not currently required to be used during core alterations or the handling of irradiated fuel in the containment, but are an alternative to the use of the CTMT purge and exhaust system noble gas monitor. This change removes the available alternative. Further, nuclear safety is not affected because the USAR Chapter 15 analysis for a fuel handling accident inside CTMT assumed that there is no isolation of CTMT, and determined the radiological consequences were acceptable.

Bases 3/4.9.4, Containment Penetrations

The proposed changes to Bases 3/4.9.4 remove the reference to the SFAS RE's and adds a discussion of the operability requirements for the CTMT purge and exhaust isolation system. These changes are administrative changes and clarifications associated with the TS 3/4.9.4 changes, and do not affect 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. Toledo Edison has reviewed the proposed changes and determined that a significant hazards consideration does not exist because operation of the Davis-Besse Nuclear Power Station (DBNPS), Unit No. 1, in accordance with this change would:

1a. Not involve a significant increase in the probability of an accident previously evaluated because no accident initiators, conditions, or assumptions are affected by the proposed changes.

The proposed changes to the Technical Specifications and their Bases ensure that during Modes 1 through 4 the Containment (CTMT) purge and exhaust isolation valves are closed with control power removed. Having these valves closed will not increase the probability of an accident because these valves are not accident initiators. They are used to mitigate the consequences of an accident. The proposed changes require these valves to be maintained in a closed position as required by design basis accident analysis.

The removal of the Safety Features Actuation System (SFAS) Radiation Monitors (RE's) and their associated SFAS Level 1 actuations does not affect any accident initiator, condition, or assumption.

During Modes 1 and 2 and partially in Mode 3, for design basis accidents which require CTMT isolation, the high/high-high CTMT pressure or low/low-low Reactor Coolant System (RCS) signals provide CTMT isolation and isolation and actuation of those components presently actuated by an SFAS Level 1 High Radiation signal. During Mode 3, when the RCS pressure is below 1800 psig, the low RCS pressure trip may be manually bypassed, and when the RCS pressure is below 600 psig, the low-low pressure trip may be manually bypassed. During the short period of time that these bypasses are activated in Mode 3, CTMT isolation is only automatically initiated by the CTMT high/high-high pressure trips. Manual SFAS actuation is also available, including Modes 1 through 4. Removing the SFAS RE's does not affect the operation of the SFAS Levels 2-4 actuation since these are based only on containment pressure and RCS pressure. Therefore, the assumption of CTMT isolation following design basis accidents is maintained.

The SFAS is not required in Mode 5. During Mode 6, the SFAS RE's and their associated SFAS Level 1 actuation are not credited during a fuel handling accident inside CTMT. The analysis for a fuel handling accident inside CTMT assumes that there is no isolation of CTMT. The probability of a fuel handling accident is not affected by these changes.

1b. Not involve a significant increase in the consequences of an accident previously evaluated because the proposed changes do not change the source term, CTMT isolation, or allowable releases.

The proposed changes to the Technical Specifications and their Bases ensure that during Modes 1 through 4, the CTMT purge and exhaust isolation valves are closed with control power removed. Having these valves closed and their control power removed ensures that the valves are in and will remain in, the proper position for CTMT isolation during and following design basis accidents. Also, during Modes 1 and 2 and partially in Mode 3, SFAS actuation on high/high-high CTMT pressure or low/low-low RCS pressure provides for diverse CTMT isolation. As noted above, during Mode 3, when the RCS pressure is below 1800 psig, the low RCS pressure trip may be manually bypassed, and when the RCS pressure is below 600 psig, the low-low pressure trip may be manually bypassed. During the short period of time that these bypasses are activated in Mode 3, CTMT isolation is only automatically initiated by the CTMT high/high-high pressure trips. In addition, manual SFAS actuation is also available, including during Modes 1 through 4. Therefore, removal of the SFAS RE's and their actuation signal does not prevent CTMT isolation.

The SFAS RE's and automatic isolation of the CTMT purge and exhaust isolation valves during a fuel handling accident is not required because the CTMT purge and exhaust isolation system, including the associated noble gas monitor, with operator action, can provide the necessary actions to mitigate a fuel handling accident inside CTMT, assuming the purge and exhaust valves are open. Therefore, removing the SFAS RE's and their actuation signal will not increase the consequences of an accident because CTMT closure is ensured. Further, it is noted that CTMT isolation is not assumed in the accident analysis for the fuel handling accident.

The Containment Radiation-High trip feature is not credited for any DBNPS Updated Safety Analysis Report (USAR) accident analysis, therefore the proposed removal of this feature will not impact radiological consequences of such accidents.

2. Not create the possibility of a new or different kind of accident from any accident previously evaluated because no new accident initiators or assumptions are introduced by the proposed changes.

   As stated above, the CTMT purge and exhaust isolation valves, the SFAS RE's, and SFAS actuation are not accident initiators. Maintaining the CTMT purge and exhaust isolation valves closed and control power removed ensures that the design basis assumption of CTMT isolation is maintained. Also, since SFAS Levels 2-4 actuation, as applicable, on high/high-high CTMT pressure or low/low-low RCS pressure or by manual actuation provides the required diversity of sensing parameters and isolation of CTMT, the SFAS RE's and their associated automatic isolation of the CTMT purge and exhaust isolation valves is not required during Modes 1 through 4. Therefore, no new or different kind of accident will be introduced.

3. Not involve a significant reduction in a margin of safety because the proposed changes maintain a redundant and diverse CTMT isolation capability following design basis accidents. Under TS 3/4.3.2,

diversity in achieving CTMT isolation by means of a high/high-high CTMT pressure or low/low-low RCS pressure SFAS actuation will be maintained during Modes 1 through 3 (except during brief periods of bypass in Mode 3), and the redundancy of the SFAS sensor instrumentation channels and actuation channels themselves will be maintained. During Modes 1 through 4 the manual actuation capability of SFAS will be maintained. During Modes 1 through 4, control room indication of normal and accident range radiation monitoring will be maintained in accordance with TS 3/4.3.3.1 and 3/4.4.6.1

Under TS 3/4.6.1.7, requiring the CTMT purge and exhaust isolation valves to be closed with control power removed, and requiring an open CTMT purge and exhaust isolation valve to be closed with control power removed within 24 hours is more restrictive than the current Technical Specifications or "The Improved Standard Technical Specifications for Babcock and Wilcox Plants," NUREG-1430, Revision 1. Under TS 3/4.9.4, the existing requirements already allow for the SFAS-initiated closure of the CTMT purge and exhaust isolation valves to be unavailable and the CTMT purge and exhaust system noble gas monitor used as an alternative means of achieving CTMT isolation. Further, it is noted that CTMT isolation is not credited in the accident analysis for the fuel handling accident. Therefore, these proposed changes do not significantly reduce the margin of safety.

CONCLUSIONS:

On the basis of the above, Toledo Edison has determined that this 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.

ATTACHMENT:

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

REFERENCES:

1. DBNPS Operating License NPF-3, Appendix A, Technical Specifications.

2. DBNPS Updated Safety Analysis Report (USAR), through Revision 20.

3. NUREG-0136, "Safety Evaluation for the Davis-Besse Nuclear Power Station," December, 1976.

4. NUREG-0737, "Clarification of TMI Action Plan Requirements."

5. NUREG-0800, "Standard Review Plan."

6. NUREG-1430, Revision 1, "Improved Standard Technical Specifications for Babcock and Wilcox Pressurized Water Reactors."

7. IEEE 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations."

8. Amendment No. 37 to Facility Operating License NPF-3, for the Davis-Besse Nuclear Power Station, dated March 24, 1981 (Toledo Edison Log No. 681).

9. Amendment No. 73 to Facility Operating License No. NPF-3, for the Davis-Besse Nuclear Power Station, dated July 25, 1984 (Toledo Edison Log No. 1562).

10. Amendment 186 to Facility Operating License NPF-3, for the Davis-Besse Nuclear Power Station, dated April 15, 1994 (Toledo Edison Log No. 4191).

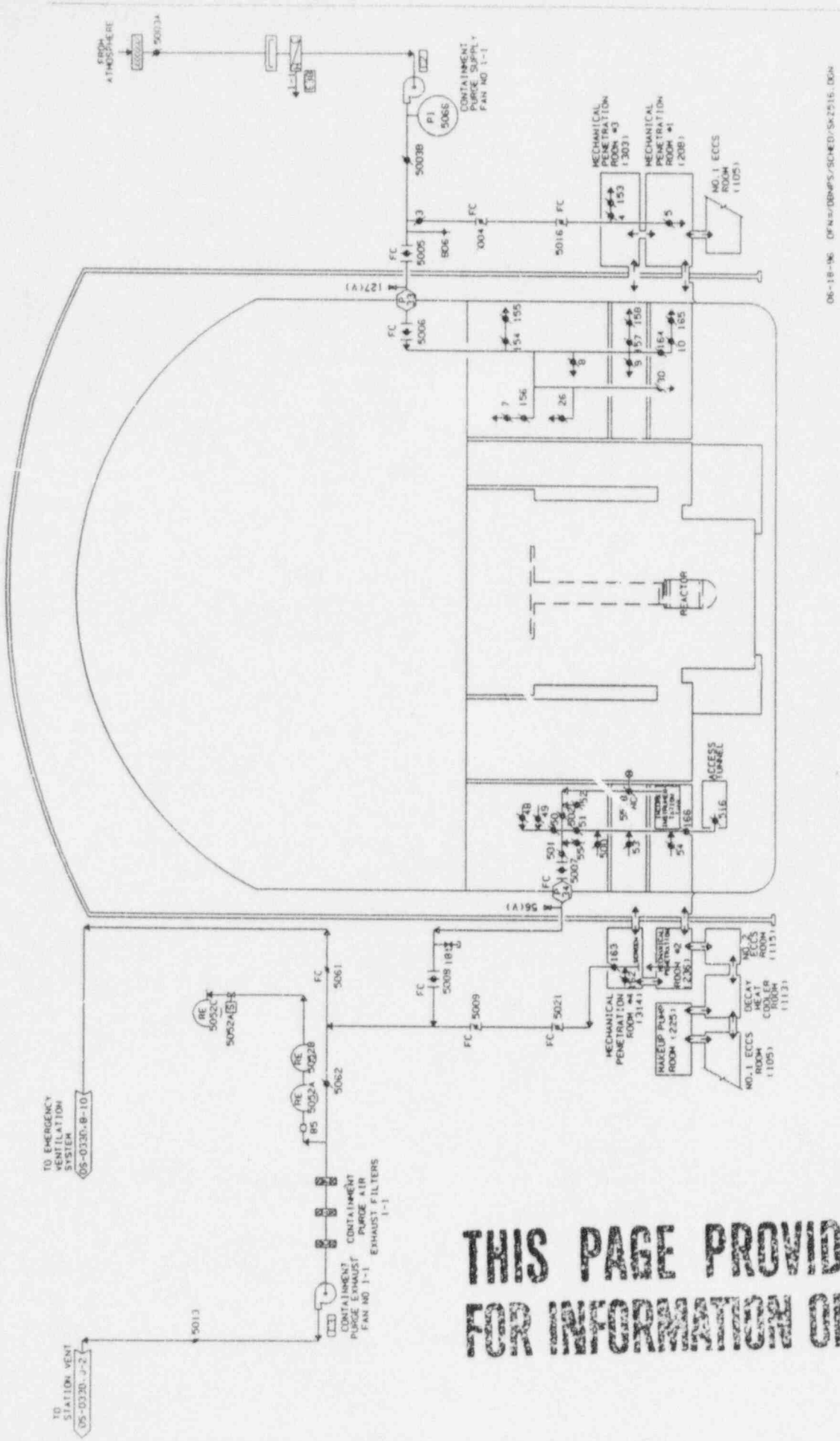

Figure 1

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