CENTERIOR ENERGY

Donald C. Shelton
Vice President - Nuclear
Davis-Besse

300 Madison Avenue
Toledo, OH 43652-0001
(419) 249-2300

Docket Number 50-346

License Number NPF-3

Serial Number 2069

July 20, 1992

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Subject: Revision 16 to the Davis-Besse Unit 1 Updated Safety Analysis Report (USAR)

Gentlemen:

The Toledo Edison Company is submitting, pursuant to 10 CFR 50.71, one (1) original plus ten (10) copies of Revision 16 to the USAR for the Davis-Besse Nuclear Power Station, Unit 1.

Updated Safety Analysis Report Revision 16 reflects facility changes implemented between January 23, 1991 and January 22, 1992, with the exception of USAR Section 9.5.1, Fire Protection Systems. Updated Safety Analysis Report Revision 15 (Serial 1973), incorporation of the Fire Hazard Analysis Report (FHAR) into USAR Section 9.5.1, was submitted to the NRC on November 1, 1991. As Section 9.5.1 was updated on November 1, 1991, a separate update of USAR Section 9.5.1 will be submitted by November 1, 1992. A summary of the major changes made in Revision 16 can be found in Attachment 1.

This submittal also reports changes to the Davis-Besse Quality Assurance Program in accordance with 10 CFR 50.54(a). Attachment 2 provides a brief summary of the changes made in this revision.

Information contained in Revision 16 to the USAR is accurate to January 22, 1992. Please insert the Revision material, dated July 1992, into the USAR per the attached Revision 16 Listing of Effective Pages.

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If you have any questions regarding this matter, please contact Mr. Robert W. Schrauder, Manager - Nuclear Licensing, at (419) 249-2366.

Very truly yours,

JMM/dlc

cc: A. B. Davis, Regional Administrator, NRC Region III
J. B. Hopkins, NRC Senior Project Manager
W. Levis, DB-1 NRC Senior Resident Inspector
Utility Radiological Safety Board

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SUBMITTAL OF REVISION 16

TO

THE DAVIS-BESSE UPDATED SAFETY ANALYSIS REPORT (USAR)

FOR

DAVIS-BESSE NUCLEAR POWER STATION

UNIT NO. 1

Enclosed are the original and 10 copies of Revision 16 to the Davis-Besse Nuclear Power Station, Unit No. 1, Updated Safety Analysis Report.

By: _____
D. C. Shelton, Vice President - Nuclear

Sworn and subscribed before me this 20th day of July, 1992.

_____
Notary Public, State of Ohio

EVELYN L. DRESS
NOTARY PUBLIC, STATE OF OHIO
My Commission Expires July 28, 1994

SUMMARY OF USAR REVISION 16 MAJOR CHANGES

Section 1 — No major changes

Section 2 — Revised the description of the fuel oil storage tanks in Section 2.2.3.6.2, Onsite Facilities, to accurately reflect the configuration of the systems.

Revised the Onsite Meteorological Measurement Program description to reflect the modification which added a backup system and upgraded the existing system.

Section 3 — Revised several sections to reflect the exclusion of dynamic effects of a postulated pipe rupture of the Reactor Coolant System and the removal of certain Pressurizer restraints.

Revised Section 3.8.2.1.12, Containment Vessel Relief Valves to reflect the replacement of several obsolete butterfly valves.

Revised several sections to include a discussion of the justification of continued operation for NRC Bulletin 88-11, Pressurizer Surge Line Thermal Stratification.

Revised Section 3.9.2.9.8 and Table 3.9-3 regarding air operated valves to add the Service Water valves that were replaced using the criteria in Generic Letter 89-09, ASME Section III Component Replacements.

Revised section 3.9.3 to include a description of the Gray Axial Power Shaping Rods that are installed in the core.

Added a paragraph to Section 3.10.2.4, Motor Control Centers, to describe the Westinghouse Five Star Motor Control Centers.

Clarified Section 3D.3.1 concerning the annulus heating.

Section 4 — Revised Section 4.2.1.3 and Table 4.2-1 on Fuel Rods, to include a description of the Dummy Fuel Rods that were installed in Cycle 8.

Corrected statement in Section 4.3.4.3, Power Maldistributions, concerning ICS asymmetric rod runback.

Corrected value of NI calibration range.

Updated Appendix 4B, Reload Report to reflect Cycle 8.

Section 5

Revised several sections to include a discussion of the justification of continued operation for NRC Bulletin 88-11, Pressurizer Surge Line Thermal Stratification.

Revised several sections to reflect the exclusion of dynamic effects of a postulated pipe rupture of the Reactor Coolant System and the removal of certain Pressurizer restraints.

Section 6

In Section 6.2.1.3.2, Long-term Containment Analysis, added a discussion of the analysis that was performed regarding the acceptability of the Containment Air Coolers with reduced Service Water flow.

Clarified Section 6.2.3, Containment Vessel Air Purification and Cleanup Systems, regarding the operation of the Containment Purge fans.

Revised various sections to reflect License Amendment 155, which clarified the testing requirements and updated the regulatory and industry guidance for High Efficiency Particulate Air filters and charcoal adsorber units in Engineered Safety Feature cleanup systems.

Corrected an error in Section 6.2.3, regarding the Containment Vessel pressure under LOCA conditions.

Revised various subsections in Section 6.2 and 6.3 to reflect re-analysis of LOCA maximum linear heat rates for Cycle 7, the addition of zircaloy spacer grids, the re-analysis of long term boron dilution following large LOCA accidents, and License Amendment 149 which revised the RCS low pressure trip setpoint.

Added reference in Table 6.2-21, Single Failure Analysis-Containment Vessel Heat Removal Systems, to Service Water valve SW82, to note that it is consistent with licensing basis and that passive failure is not considered credible.

Removed the Makeup Pumps and LPI Crossover piping and valves from Section 6.3.2.11, ECCS Equipment Reliability Considerations, as they were incorrectly listed as ESF equipment.

Revised Table 6.3-2, ECCS Component Design Conditions, to re-rate the HPI discharge line where it is pressurized due to leakage of Makeup System injection.

Section 7

Deleted Figure 7.2-2, Pressure Temperature Boundaries, and referenced Technical Specifications.

Revised Section 7.3.1.1.3, SFAS Bypasses, to include the SFAS Shutdown Bypass that was installed in the Seventh Refueling Outage.

Revised section 7.7.1.1, Non-Nuclear Instrumentation Station Control Systems, to reflect the modification which removed the asymmetric rod runback feature from ICS.

Removed the Automatic Dispatch System and the Load Frequency Control from ICS since these features are not utilized and the circuitry is removed.

Revised Section 7.8.1.1, Neutron Detectors, to reflect the calibration of the power range NI channels.

Corrected calibration value of the Ex-Core Neutron Flux detectors.

Added a section to 7.13, Post Accident Monitoring System, to reflect the Steam Generator Start-up Level Indicators which were installed in the Seventh Refueling Outage.

Section 8 — Revised Section 8.1.2.1, Main Generator System, to reflect the modification which improved the Main Generator sequential tripping circuit based on a General Electric Company Technical Information Letter.

Revised Section 8.3.1.1.4, Emergency Diesel Generators, to reflect the modification which installed synchronism check relays to prevent manual closing of the emergency diesel generator output breakers.

Corrected Section 8.3.1.1.5, 480V AC Auxiliary System, to reflect the elimination of one of two outdoor distribution centers.

Revised Section 8.3.1.1.6, to reflect the modification that replaced two of the four cyberex inverters in the 120V AC system.

Revised various subsections in Section 8.3.1.2 to reflect the modification which added backup fault protection to 21 power circuits which pass through an Electrical Penetration Assembly.

Section 9 — In Section 9.0, Auxiliary Systems, under the codes and standards used, added reference to the Service Water valves that were replaced using the criteria in Generic Letter 89-09, ASME Section III Component Replacements.

In Section 9.1.3.11, Loss of Water from the Fuel Pool, added the evaluation of the capabilities of the siphon breaker to prevent water loss from the Spent Fuel Pool (SFP) in the event of a postulated pipe break in the seismic class II portion of the SFP cooling and cleanup system piping.

In Section 9.2.1, Service Water, added reference to the modification which installed flow elements in the Service Water System to enhance system balancing and pump testing.

Corrected SFAS level at which Component Cooling Water valves will be isolated.

Added note to Table 9.2-1, Service Water System Design Parameters for Major Equipment, to reference the analysis that was performed regarding the acceptability of the Containment Air Coolers with reduced Service Water flow.

Added reference in Table 9.2-3, Single Failure Analysis Service Water Systems, and Table 9.4-6, Single Failure Analysis - ECCS Room Cooling Units, to Service Water valve SW62, to note that it is consistent with licensing basis and that passive failure is not considered credible.

In Section 9.3.3.1, Station Drainage and Discharge System, added a discussion of the Wet Wash Facility which was installed during the Seventh Refueling Outage.

Revised Section 9.3.4, Makeup and Purification System, to reflect change that allowed Purification Demineralizer 1-3 to function as either a cation or mixed-bed demineralizer.

Revised Section 9.3.5, Decay Heat Removal System, to address alarm setpoints during shutdown, low RCS level conditions.

Revised Table 9.3-8, Makeup and Purification System Component Data to reflect new filter ratings for the Source Term Reduction Program.

In Section 9.4, Air Conditioning, Heating, Cooling and Ventilation Systems, deleted reference to Control Room Chlorine Detectors which were abandoned in-place.

Revised Section 9.4 to reflect License Amendment 155, which clarified the testing requirements and updated the regulatory and industry guidance for High Efficiency Particulate Air filters and charcoal adsorber units in Engineered Safety Feature cleanup systems.

Revised Section 9.4.2.1.2.2, Low Voltage Switchgear Rooms, to reflect means by which winter heating is accomplished in the room

Deleted Section 9.5.2.2.4, Control Room Intercom, as it is no longer installed.

Section 10 — No major changes.

Section 11 — Added reference to the Wet Wash Facility throughout Section 11.

Revised Section 11.2.2.3.2, Demineralizers, to reflect the change in Purification Demineralizer 1-3 which allowed it to be either a cation or mixed-bed demineralizer.

Revised Table 11.2-1, Clean Liquid Radioactive Water System Equipment List, to reflect new filter ratings for the Source Term Reduction Program

Revised Table 11.4-1, Liquid, Gas and Airborne Radiation Monitors, to reflect the new values reported in the revised Victoreen calibration report.

Section 12 — Throughout Section 12, the title of Radiological Control was changed to Radiation Protection. This change was made to be consistent with the terminology used in the draft standard of ANSI/ANS 3.1, January 1991.

Revised Section 12.2, Ventilation, to reflect License Amendment 155, which clarified the testing requirements and updated the regulatory and industry guidance for High Efficiency Particulate Air filters and charcoal adsorber units in Engineered Safety Feature cleanup systems.

Revised Section 12.3.2.2.2, Counting Equipment for Radioactivity Measurements, to reflect the new gamma spectroscopy system.

Clarified Section 12.3.3, Personnel Dosimetry, regarding the methods used to administratively control dose levels.

Section 13 — Revised Section 13.1, Organizational Structure, to reflect Centerior Management reorganization.

In Section 13.1.2.6.3, Radiological Controls Section, the title of Radiological Control was changed to Radiation Protection. This change was made to be consistent with the terminology used in the draft standard of ANSI/ANS 3.1, January 1991. There were also changes in reporting assignments.

Revised Section 13.2, Training Program, to reflect procedure title changes.

Revised the Subsections under Section 13.6.1.1, Daily Logs, to reflect the change that eliminated the Reactor Operator Log and moved the logging requirements into the Unit Log. The STA Log was also eliminated as Operation's personnel no longer perform the activities involving transient assessment and industry event review.

Revised Section 13.7, Industrial Security, to eliminate visitor and vehicle control on the Owner Controlled Area. Federal requirements for visitors and vehicles are limited to the Protected Area.

Section 15 Throughout Section 15 accident analysis, notes were added noting that additional analysis were performed with a moderator temperature coefficient more negative than the previous limit.

Section 15.4.4, Steam Line Break, was re-written to include information from the FSAR Questions and Answers not previously incorporated, to restructure the subsections to make the section flow better and to incorporate License Amendment 149 which lowered the RPS RCS low pressure trip setpoint.

A subsection was added to Section 15.4.5, Break in Instrument Lines or Lines from Primary System that Penetrate Containment, to include License Amendment 149 which lowered the RPS RCS low pressure trip setpoint.

Added a subsection to Section 15.4.6, Major Rupture of Pipes Containing Reactor Coolant Up To and Including Double-Ended Rupture of the Largest Pipe in the Reactor Coolant System, to include License Amendment 160 which increased the allowed secondary containment bypass leakage rate.

CHANGES TO QUALITY ASSURANCE PROGRAM

Section 17

Section 17.2.1.3 was revised to reflect a reorganization of corporate management. Centerior Energy's Chairman and Chief Executive Officer, R. A. Miller retired and was replaced by R. J. Farling, formerly President and Chief Operating Officer. The position of President and Chief Operating Officer was combined with Mr. Miller's position of Chairman and Chief Executive Officer. Mr. Farling's new position title is Chairman, President and Chief Executive Officer. Along with this change, the Centerior Energy Board of Directors also created a new position of Senior Vice President - Legal, Human and Corporate Affairs. This new position will have the Vice President - Legal and General Counsel, Vice President - Human Resources and Strategic Planning, Director - Governmental Affairs and the Director - Public Affairs reporting to it. These organizational changes do not alter or negate Toledo Edison's commitment to provide and describe the organizations responsible for establishment and implementation of the Nuclear Quality Assurance Program.

In Section 17.2.1.4, Toledo Edison Nuclear Group, the title of Manager - Radiological Control was changed to Manager - Radiation Protection. This change was made to be consistent with the terminology used in the draft standard of ANSI/ANS 3.1, January 1991. The functional responsibilities still remain such that the necessary level of quality objectives continue to be attained and to assure satisfaction of Toledo Edison's commitments.

Section 17.2.1.4 was changed to clarify the responsibilities of Performance Engineering. The examples of document types reviewed by Performance Engineering in support of improved performance and reliability and special engineering projects were deleted. A clarification was also made to state that Performance Engineering reviews all external information that is received. The responsibility for the Manager - Performance Engineering to review all external information in support of the improved performance and reliability and special engineering projects was established as a result of a related docketed commitment. The commitment was to provide measures for the tracking of transient assessments and transient assessment program reports received for review and evaluation. Since the USAR update did not specifically identify the "review of information received", additional clarification is being added to the QA Program description to be consistent with QA commitments existing in docketed correspondence. Deletion of the examples of document types reviewed is needed to avoid further USAR updates when specific document types become obsolete or nonexistent.

Section 17.2.4.3, Procurement Document Review was revised to replace the Engineering Assurance in-line quality review of procurement documents with an additional and separate procurement engineering technical and quality review. This change was submitted to the NRC in Serial 1604, dated October 21, 1988 and approved by the NRC on June 18, 1991.

In Section 17.2.5.2, Review and Approval, replaces the biennial review of plant procedures with programmatic controls and yearly surveillance. This change was submitted to the NRC in Serial letters 1-957 and 1-962, dated July 31, 1991 and September 9, 1991 respectively, and approved by the NRC on September 18, 1991.

Section 17.2.7.3 was revised to clarify the requirements for acceptance and unconditional release of items for use in quality related applications. The previous wording in this section stated that an item is considered as non-acceptable until sufficient quality documentation has been provided and that unacceptable materials or items discovered during the receipt inspection process are documented and processed as non-conforming material. It was never the intent to document material as non-conforming for documentation that is forthcoming or in the process of being evaluated. The current receipt inspection process specifies that material cannot be unconditionally released for use until all aspects of the inspection have been satisfactorily completed, including review of documentation. The procedure is to identify any non-conformances at the completion of the receipt inspection process. While the specified combination of required inspections are proceeding, material is maintained in a hold status. The USAR has been revised to more clearly reflect the existing intent for the conduct of receipt inspection including documentation and processing of non-conforming items.

Table 17.2-1, Item 2.C was revised to delete the use of the General Material Inspection Checklist (GMIC) as the document that specified special storage or handling requirements for equipment. The Data Assignment Sheet (DAS) will be used in place of the GMIC. Reference to the GMIC was deleted in the USAR and the phrase "in procurement documents" was substituted. This change is consistent with the requirements of 10 CFR 50 Appendix B to establish measures to assure that applicable regulatory requirements, design bases and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, and equipment, and to establish measures to assure that purchased material and equipment conform to procurement requirements.

Table 17.2-1, Item 4 was revised to include an exception to ANSI/ANS 3.2-1982, Section 5.2.1.6, regarding facility staff overtime. In previous revisions to this Table, Davis-Besse committed to the proposed Revision 3 of Regulatory Guide 1.33-July 1981. The proposed Reg Guide did not endorse the work time limitations provided in ANSI/ANS 3.2-1982, but the NRC endorsed Davis-Besse Technical Specifications which provide requirements for facility staff overtime limitations. In a subsequent revision to the USAR the commitment to the proposed Revision 3 to Reg Guide 1.33-7/81 was deleted because of non-endorsement of the proposed Reg Guide by the NRC. At that time USAR Table 17.2-1, Item 4 should have been clarified to reflect exception to ANSI/ANS 3.2-1982 as accepted in the Davis-Besse Technical Specifications.

In Table 17.2-1, Item 16, corrected date of Regulatory Guide 1.123, Revision 1.

Table 17.2-1, Item 16.2.A was revised to delete the "Q" in the phrase "commercial grade" "Q". This action was committed to in Serial 1986 (October 7, 1991) as a response to NRC's request to clarify the phrase "Commercial Grade""Q", (Log 1-2537). Commercial grade items are not "Q", but are rather dedicated for use in "Q" applications in accordance with the established requirements of USAR 17.2.4.1.