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Docket Number 50-346

License Number NPF-3

Serial Number 1962

July 22, 1991

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

Subject: Revision 14 to the Davis-Besse Unit 1 Updated Safety Analysis  
Report (USAR)

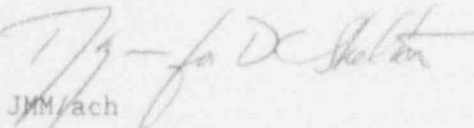
Gentlemen:

The Toledo Edison Company is submitting, pursuant to 10 CFR 50.71, one (1) original plus ten (10) copies of Revision 14 to the USAR for the Davis-Besse Nuclear Power Station, Unit 1. For administrative reasons no changes were made to the USAR under Revision 13.

Updated Safety Analysis Report Revision 14 reflects facility changes implemented between January 22, 1990 and January 22, 1991, and corrects discrepancies which have been discovered in the USAR. This submittal also reports changes to the Davis-Besse Quality Assurance Program in accordance with 10 CFR 50.54(a). Attachment 1 provides a brief summary of the changes made in this revision.

Information contained in Revision 14 to the USAR is accurate to January 22, 1991. Please insert the Revision material, dated July 1991, into the USAR per the attached Revision 14 Listing of Effective Pages.

Very truly yours,

  
JMM/ach

Enclosure  
Attachment

cc: P. M. Byron, NRC Region III, DB-1 Senior Resident Inspector  
A. B. Davis, Regional Administrator, NRC Region III  
J. B. Hopkins, NRC/NRR DB-1 Senior Project Manager  
Utility Radiological Safety Board

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SUBMITTAL OF REVISION 14

TO

THE DAVIS-BESSE UPDATED SAFETY ANALYSIS REPORT (USAR)

FOR

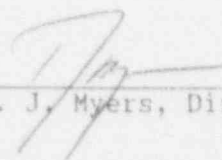
DAVIS-BESSE NUCLEAR POWER STATION

UNIT NO. 1

Enclosed are the original and 10 copies of Revision 14 to the Davis-Besse Nuclear Power Station, Unit No. 1, Updated Safety Analysis Report.

For: D. C. Shelton, Vice President, Nuclear

By:

  
T. J. Myers, Director - Technical Services

Sworn and subscribed before me this 22nd day of July, 1991.

  
Notary Public, State of Ohio

JUDITH HIRSCH  
Notary Public State Of Ohio  
My Commission Expires June 30, 1992

## SUMMARY OF USAR REVISION 14 MAJOR CHANGES

- Section 1 Deleted Piping and Instrument Drawings (P&IDs) contained in the USAR and replaced them with functional drawings. The functional drawings are simplified flow diagrams which contain sufficient detail to provide an understanding of how each plant system functions. P&IDs in the following sections have been replaced: 3, 5, 6, 7, 9, 10 and 11.
- Revised Section 1.4.1, Identification of Agents and Contractors, to reflect the organizational structure under the Centerior Energy Corporation, in accordance with License Amendment 152.
- Section 2 No major changes.
- Section 3 Revised Section 3.6-3 to accurately reflect the pipe break criteria used to locate and design the pipe whip restraints for the Main Steam, Main Feedwater, Decay Heat, Auxiliary Feedwater and Core Flood systems.
- Revised Section 3.6.2.6.2, Reactor Coolant System Supports, to correct inconsistencies in the explanation of design load cases and allowable stress values. The revision now gives details of load cases and stress allowables used in the design of the reactor vessel and steam generator non-integral component supports.
- Revised Section 3.6.2.7.15 to add Auxiliary Feedwater flow control valves 1-1 and 1-2 and associated cabling to the listing of rooms that contain safety-related equipment.
- In Section 3.6.2.7.2.13, modified the description of flooding that would occur following a circulating water line break to better describe the sequence of events based on the configuration of the condenser pit.
- Removed a statement regarding a jet impingement shield wall in Section 3.6.2.7.1.4. The wall was in the original plant design but due to a modified design it was not installed.
- Deleted equipment locations and various electrical raceway drawings that were referenced in Table 3.3-1, "Essential Systems Required for a Safe Shutdown in the Event of a Tornado".
- Section 4 Revised the description of the core barrel bolts to reflect the modification that replaced 60 of the 108 welded locking clips with locking cups.
- Added a section, 4.3.5.9, under Reactivity Monitoring to describe the ex-core neutron flux detectors.

Raised the Anticipatory Reactor Trip System (ARTS) turbine trip arming setpoint from 25% to 45% of full power in accordance with License Amendment 135.

Section 5 Added the Steam Generator inspection openings to Table 5.1-5, "Steam Generator Design Data".

Updated Section 5.2.5, Inservice Inspection, to reflect Davis-Besse's commitment to the 1986 revision to ASME Section XI, for the Inservice Inspection Program.

Changed the Integrated Control System runback rates from 50 percent to 20 percent per minute.

Section 6 Revised Table 6.3-6, "Single Failure Analysis - Emergency Core Cooling System", to maintain DH9A and DH9B, isolation valves in the containment emergency sump outlet line, closed and the breakers tripped open to resolve an Appendix R concern of a fire induced fault causing DH9A and DH9B to actuate.

Section 7 Section 7.1.2.6, Compliance with IEEE Standard 317 - 1971, was revised to reflect various modifications to the electrical penetrations that added Conax header plates and feedthrough assemblies and/or replaced existing Amphenol feedthroughs with Conax replacements.

Revised Table 7.5-1, "Information Readouts Available to Operator for Monitoring Conditions in Reactor, Reactor Coolant System, Containment Vessel, ECCS and Steam Generator", to revise indicator accuracies to reflect manufacturer's specifications, identify additional post accident monitoring sensors already present in the table and correcting several indicator ranges.

Added a description of the Diverse Scram System (DSS) that was installed to comply with 10 CFR 50.62.

Added a section, 7.13.3.11, under Reactivity Monitoring to describe the ex-core neutron flux detectors.

Revised the Steam and Feedwater Rupture Control System Steam Generator high level trip setpoint to actuate at 225 inches on the start-up range level instrumentation.

Raised the Anticipatory Reactor Trip System (ARTS) turbine trip arming setpoint from 25% to 45% of full power in accordance with License Amendment 135.

Changed the Integrated Control System runback rates from 50 percent to 20 percent per minute.

Changed feed and bleed permissive in the Integrated Control System to allow continuous feed and bleed at full power levels provided the safety rods are 100 percent withdrawn and control rod group 5 is greater than 25 percent withdrawn.

Section 8 In Section 8.3.1.1.4 revised Emergency Diesel Generator air start system description to include the third compressor that was added during the sixth refueling outage.

Added a brief description of the air booster line check valves in the EDG air start system.

Revised Section 8.3.1.1.5 to reflect the installation of grounding resistors in the neutrals of the four class 1E distribution transformers CE1-1, CE1-2, DF1-1, and DF1-2.

Added a statement to Section 8.3.2.1.6 to reflect the installation of overvoltage relays on the station batteries that alarm at 150 volts.

Section 9 Revised Section 9.1.4.2.2, Fuel Handling Equipment, to describe modification that was performed on the fuel and control rod masts to make them compatible with the new Mark B5 fuel assemblies, Burnable Poison Rods and Orifice Rods.

Added a statement to 9.1.4.2.3, Loading and Removing Fuel, regarding the use of Steam Generator nozzle dams if Steam Generator maintenance is performed during refueling.

Added statements describing the cross-tie that was installed to the essential component cooling water header to allow for alignment of the essential header to the makeup pump for cooling during feed and bleed conditions.

Modified Table 9.4-6, "Single Failure Analysis-ECCS Room Cooling Units", to state that for a certain range of service water temperature, operation with only one ECCS room cooler per room is acceptable.

Revised Table 9.2-3, "Single Failure Analysis Service Water System", to remove the passive mechanical failures.

Revised Section 9.5.4 to reflect the replacement of the Emergency Diesel Generator fuel oil storage tank level switches with new measuring probes.

Section 10 In Section 10.3.1.1.1, Main Steam temperature and pressure limits, removed the Safety Features Actuation System signal from the Main Steam Isolation Valves.

Section 11 Revised Section 11.6 to be consistent with Technical Specifications description of the Radiological Environmental Monitoring Program.

Corrected the sensitivity value for radiation monitor RE-1822B.

Section 12 No major changes.

Section 13 This Section was revised to reflect organization changes resulting from the Centerior Energy Corporation reorganization.

Section 15 Various changes to reflect accident re-analysis as a result of the Cycle 7 core reload.

Increased the allowable response time for the high flux/number of reactor coolant pumps on, trip function of the Reactor Protection System from 451 milliseconds to 631 milliseconds. This change is in accordance with License Amendment 148. The reanalysis conducted for Amendment 148 also used a new value for the trip delay time of 800 milliseconds.

Added statements to section 15.4, Accident Analysis, to reflect re-analysis done in Cycle 6 Reload Report based on a more conservative source term and three 450 effective full power day cycles.

Lowered the Integrated Control System pressure setpoints on the turbine bypass system to 935 and 1010 psia to reduce challenges to the Main Steam Safety Valves.

Raised the Anticipatory Reactor Trip System (ARTS) turbine trip arming setpoint from 25% to 45% of full power in accordance with License Amendment 135.

Changed feed and bleed permissive in the Integrated Control System to allow continuous feed and bleed at full power levels provided the safety rods are 100 percent withdrawn and control rod group 5 is greater than 25 percent withdrawn.

Incorporated results of re-analysis of main steam line break on one side with a stuck open main steam safety valve on the other side.

Section 16 No major changes.

Section 17 Table 17.2-1, "Applicable NRC Regulatory Guides, ANSI Standards, and Industry Codes", was updated to reflect Davis-Besse's commitment to the 1986 revision to ASME Section XI, for the Inservice Inspection Program.



Section 17.2 was revised to reflect organizational changes resulting from the Centerior Energy Corporation reorganization in accordance with License Amendment 152. Notable changes include:

Toledo Edison's Nuclear Group (including QA and the Quality Assurance Program) report to and is the responsibility of the Vice President - Nuclear, Davis-Besse - Centerior Service Company. The Centerior Service Company (CSC) has ultimate responsibility for the physical construction, operation and maintenance of the Davis-Besse Nuclear Power Station.

Restructuring of and using services from other sectors of the Centerior Service Company. These services include: Procurement; Security; Computer related activities; Inspection, analytical and non-destructive examination; and Medical Services.

Restructuring of the Nuclear Group in the following areas:

- Industrial Security Section report to the Plant Manager;
- Station modification activities are the responsibility of the Manager - DB Maintenance;
- Materials Management Section reports to the Director - Planning and Scheduling;
- Reactor and core performance activities are the responsibility of the Manager - Nuclear Engineering;
- Non-radiological environmental compliance activities and technical support functions for the resolution of plant deficiencies and deviations are the responsibility of the Manager - Nuclear Licensing.
- Manager - Nuclear Plant Services is responsible for support services such as records management, procedure activities and office services.

Revised responsibilities of Manager-Engineering Assurance and Services to include engineering support functions as reviewed and approved in NRC letter dated June 29, 1990 (Log No. 1-2305).