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NP-33-02-005-02

Docket No. 50-346

License No. NPF-3

May 21, 2003

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Ladies and Gentlemen:

LER 2002-005-02
Davis-Besse Nuclear Power Station, Unit No. 1
Date of Occurrence – September 4, 2002

Enclosed please find Revision 2 to Licensee Event Report (LER) 2002-005, which is being submitted to provide additional information regarding the potential clogging of the Emergency Sump due to debris in the Containment. This revision supersedes our submittal of LER 2002-005-01, and revision bars have been added to denote changes from the previous submittal. This LER is being submitted in accordance with 10CFR50.73(a)(2)(i)(B), 10CFR50.73(a)(2)(v)(B), 10CFR50.73(a)(2)(v)(D) and 10CFR50.73(a)(2)(vii).

Very truly yours,

Lew W Myers

AWB/s

Enclosure

cc: Mr. J. E. Dyer, Regional Administrator, USNRC Region III
Mr. C. S. Thomas, DB-1 NRC Senior Resident Inspector
Utility Radiological Safety Board

IE22

COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station in this document. Any other actions discussed in the submittal represent intended or planned actions by Davis-Besse. They are described only as information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8450) at Davis-Besse of any questions regarding this document or associated regulatory commitments.

COMMITMENTS	DUE DATE
The old Emergency Sump Strainer will be removed and a new strainer with greater surface area will be installed.	Prior to restart.
The fibrous insulation and unqualified coatings left in the Containment will be identified and evaluated (in conjunction with other potential debris) for effect on the Emergency Core Cooling System and Containment Spray System. The evaluation will include debris generation, debris transport, and head loss analysis to verify there is adequate margin for Net Positive Suction Head (NPSH) at the affected pumps. Controls will be established for potential debris sources to ensure adequate NPSH requirements are met.	Prior to restart.
Containment Emergency Sump Inspection Procedure, DB-SP-03134, and emergency sump drawings will be updated due to the modification. Due to the removal of the previous sump, the drawing in place which permitted the gap is no longer valid, therefore, the procedure that focused on the grating will be revised and new sump screen drawing(s) will be created as a part of the modification process.	Prior to restart
A Nuclear Safety-Related Coatings Program will be developed and maintained for coating material application to structures and components located within the Containment.	September 30, 2003

NRC FORM 366 (1-2001) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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TITLE (4)
Potential Clogging of the Emergency Sump Due to Debris in Containment

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
09	04	2002	2002	– 005 –	02	05	21	2003	FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9): D

POWER LEVEL (10): 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)

	20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(i)(C)	X	50.73(a)(2)(vii)
	20.2201(d)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(A)
	20.2203(a)(1)		20.2203(a)(4)		50.73(a)(2)(ii)(B)		50.73(a)(2)(viii)(B)
	20.2203(a)(2)(i)		50.36(c)(1)(i)(A)		50.73(a)(2)(iii)		50.73(a)(2)(ix)(A)
	20.2203(a)(2)(ii)		50.36(c)(1)(ii)(A)		50.73(a)(2)(iv)(A)		50.73(a)(2)(x)
	20.2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(v)(A)		73.71(a)(4)
	20.2203(a)(2)(iv)		50.46(a)(3)(ii)	X	50.73(a)(2)(v)(B)		73.71(a)(5)
	20.2203(a)(2)(v)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(C)		OTHER
	20.2203(a)(2)(vi)	X	50.73(a)(2)(i)(B)	X	50.73(a)(2)(v)(D)		Specify in Abstract below or in NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Aaron W. Bless, Engineer – Licensing	(419) 321-8543

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On September 4, 2002, with the reactor defueled, investigations determined that a gap in the sump screen larger than allowed by design basis (greater than 1/4-inch openings) existed. Also, the existing amount of unqualified coatings and other debris inside containment could have potentially blocked the emergency sump intake screen, rendering the sump inoperable, following a loss of coolant accident. With the emergency sump inoperable, both independent Emergency Core Cooling Systems (ECCS) and both Containment Spray (CS) systems are inoperable, due to both requiring suction from the emergency sump during the recirculation phase of operation. This could prevent both trains of ECCS from removing residual heat from the reactor and could prevent CS from removing heat and fission product iodine from the containment atmosphere. This condition is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications, in accordance with 10 CFR 50.73(a)(2)(v)(B) and (D) as a condition that could have prevented fulfillment of a safety function and in accordance with 10 CFR 50.73(a)(2)(vii) where a single cause or condition caused two independent trains or channels to become inoperable in a single system. Actions to address debris issues are being undertaken and construction of a new strainer system to restore operability and add margin is in progress.

DESCRIPTION OF OCCURRENCE:

A Return to Service Plan was created to describe Davis-Besse Nuclear Power Station's (DBNPS) course of action for a safe and reliable return to service after the discovery of a large cavity in the Reactor Vessel [AB-VSL] Head. Included in the Return to Service Plan is the Containment Health Assurance Plan that focuses on the extent of the nozzle leakage, and any damage that may have resulted from the dispersion of boric acid in the containment building [NH]. The scope has been expanded to assess the adequacy of several areas in containment including the Containment Emergency Sump and Containment Coatings.

The original configuration of the Emergency Sump consisted of one sump, two horizontal exit openings, an intake screen on top of the sump and antivortexing plates. The emergency sump was roughly 14 feet long, 5 feet wide and 2 feet high, with approximately 50 square feet of available (vertical) surface area. An intake screen was installed over the sump to prevent large particles from getting into the emergency sump suction line, plugging up the spray nozzles, and/or damaging the Decay Heat [BP-P] or Containment Spray (CS) pumps [BE-P] by increasing seal leakage. The wire mesh screen, with 1/4-inch openings, was designed to be a free-flow area so that there would be negligible flow resistance even if 50 percent blocked, which equates to roughly 25 square feet (vertical), of the screen gets clogged with debris. With greater than 25 square feet of the intake screen covered, adequate free-flow area may not exist. Each of the two emergency sump suction lines is sized for carrying the maximum flow rate of one low-pressure injection (LPI) pump [BP-P] (4,000 gpm) and one containment spray pump (1,500 gpm).

After the borated water from the Borated Water Storage Tank (BWST) [BP-TK] has been injected into the reactor vessel, the emergency sump is designed to provide continuous recirculation of the spilled reactor coolant to the Emergency Core Cooling System (ECCS) and the CS System following a Loss of Coolant Accident (LOCA). The minimum amount of time to deplete the BWST is approximately 25 minutes, following a Large Break LOCA (the time for BWST depletion would increase for a Small Break LOCA). During the recirculation phase, the function of the ECCS is to remove residual decay heat by recirculating the spilled reactor coolant and injecting water from the emergency sump to the reactor vessel to maintain long-term cooling.

The CS system has the function of removing heat and fission product iodine from the post-accident environment and consists of two independent trains capable of taking suction from the containment emergency sump during the recirculation phase of the operation. During the recirculation phase of operation, one independent train of the ECCS, composed of the following is required for long term cooling (two are required to be operable in Modes 1-3 by the DBNPS Technical Specifications): one operable high pressure injection pump [BQ-P], one operable low pressure injection (LPI) pump, one operable decay heat cooler [BP-CLR], and an operable flow path capable of taking suction from the containment sump. To maintain long-term core cooling during the recirculation phase of operation a minimum flow rate of approximately 3,000 gpm through the Decay Heat System is assumed by analysis.

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TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

DESCRIPTION OF OCCURRENCE (continued):

During the inspections of the Containment that were performed in accordance with the Containment Health Assurance Plans, it was discovered that the Emergency Sump Strainer could be significantly challenged by debris in the Containment after a LOCA. On September 04, 2002, with the reactor defueled, a condition report (CR 2002-05461) was written that documented the potential for unqualified coatings to clog over 50 percent of the emergency sump screen. The condition report also documented that a preliminary evaluation of a gap, that had existed in the sump screen (approximately 3/4-inch wide by 6-inches long) apparently since the installation of the strainer during construction, had the potential to pass debris larger than design bases allowed (greater than 1/4-inch openings), potentially rendering the Containment Spray System inoperable after a LOCA.

Debris in the Containment Building after a LOCA has the potential to be transported to the emergency sump and clog the screen. Debris includes the aggregate of all unqualified coatings, which are assumed to come off of the substrate due to the LOCA environment, the coatings (unqualified or qualified) and other debris (including but not limited to fibrous insulation) which could be generated by a LOCA in the zone of influence due to blowdown of the reactor coolant system, and other debris that has the potential to flow to the sump after a LOCA.

The amount of debris that could be generated, and the amount that could be transported to the Emergency Sump Screen was evaluated as a part of the Containment Health Assurance Plan (CH-DAP-2C-01 Revision 1, Emergency Sump Discovery Action Plan). This information has been utilized in the design of the replacement Emergency Sump Screen.

The concern with this potential amount of debris is that it could travel to the emergency sump and possibly cover greater than 25 square feet of the intake screen. As stated above, with greater than 25 square feet of the screen clogged with debris an adequate free-flow area is not assured. Debris blockage during recirculation could create excessive head loss and prevent adequate flow for core cooling and containment spray or could lead to pump damage as stated in NRC Generic Safety Issue 191: "Parametric Evaluations for Pressurized Water Reactors Recirculation Sump Performance" dated August 2001. As a result of the amount of unqualified coatings, other potential debris that could exist in the containment post LOCA, and the gap in the sump screen, which is capable of passing debris larger than design basis allowed, the emergency sump was declared inoperable and a condition report (2002-05461) was generated to prevent restart until appropriate actions were completed.

Because both independent ECCS subsystems require suction from the emergency sump after inventory depletion of the BWST, both ECCS subsystems are inoperable because they cannot meet requirements to remove residual decay heat from the reactor. Therefore, this condition is being submitted in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications, in accordance with 10 CFR 50.73(a)(2)(v)(B) as a condition that could have prevented fulfillment of a safety function designed to remove

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DESCRIPTION OF OCCURRENCE (continued):

residual heat, and in accordance with 10 CFR 50.73(a)(2)(vii) where a single cause or condition caused two independent trains or channels to become inoperable in a single system.

Because of the gap in the screen, large debris outside of the design basis of the screen could potentially bypass the 1/4-inch screen mesh after a LOCA and potentially clog the CS nozzles rendering the CS system inoperable. In addition, although the containment spray system is not an ECCS system it is interconnected to ECCS piping. Therefore, with less than design basis required flow through the emergency sump to the CS system, clogging of the sump screen has the potential to render both trains of CS inoperable. Due to the two examples listed above for the CS system, this condition is also being reported under 10CFR50.73(a)(2)(v)(D) as a condition that could have prevented fulfillment of a safety function designed to mitigate the consequences of an accident.

APPARENT CAUSE OF OCCURRENCE:

The concerns and issues associated with the emergency sump and the potential debris sources in relation to blockage of the strainer have been documented in several condition reports. The causes identified in the emergency sump evaluation and the unqualified coatings applied within containment evaluation include: no specific design criteria was available for the emergency sump, various engineering processes were ineffective, and problems in communication (both written and verbal) during construction. Below is more information on the causes along with contributing causes and concerns.

UNQUALIFIED COATINGS

Inspections of protective coatings applied to Systems, Structures, and Components (SSCs) located within the Containment have identified amounts of unqualified (non-Design Basis Accident tested/qualified) coatings. Unqualified coating material identified in the Davis-Besse Updated Final Safety Analysis Report as being excluded from qualified coating material requirements (inside surfaces of cabinets and insulated components) are not included in the unqualified coatings inventory. The majority of these unqualified coatings existed in the Containment Building prior to initial operation due to original construction acceptance not enforcing the prohibition of unqualified coatings.

During reviews of inspection findings for containment coatings, a letter from Babcock & Wilcox (dated December 17, 1976) to the Toledo Edison Company, Davis-Besse Unit 1, informed Toledo Edison that Babcock & Wilcox had no data regarding design basis accident testing for particular paints. The equipment coated with the unqualified paint identified in the letter included the reactor coolant pump motors [AB-MO], reactor vessel, steam generators [AB-SG], pressurizer [AB-PZR], and reactor coolant system piping (the core flood tanks [BP-TK] were discovered to be coated with the same paint identified in this correspondence, however the core flood tanks were not mentioned in the letter). No identified action was taken during construction in response to the 1976 letter from Babcock & Wilcox to resolve the issue of unqualified coatings. This correspondence identified a few

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APPARENT CAUSE OF OCCURRENCE (continued):

of the sources of unqualified coatings in the containment. Additional unqualified coatings, such as the coatings applied to electrical conduit, were identified during containment walkdowns.

The cause for the unqualified containment coatings is documented as problems in communication (both written and verbal) with prime contractor oversight and interaction with the painting sub-contractor coating activities during initial plant construction to ensure that the construction painting specification requirements were met.

Some contributing causes listed in condition reports written documenting the walkdown findings include: lack of appropriate engineering controls and process compliance for coatings used and items installed in the Containment before the outage and during original construction; the installation of SSCs with manufacturer's standard unqualified finishes, or applications of qualified coating material over the manufacturer's standard finish; the documentation regarding specification, application and training was not maintained/enhanced to address the current industry approach to safety-related coatings; initial calculations that were performed to evaluate the sump did not consider the aggregate effect of all sources (including fibrous insulation).

<u>OTHER DEBRIS</u>
The quantity of identified failed/degraded qualified coatings, fibrous insulation, and other miscellaneous potential debris that can reach the emergency sump screen was not controlled. Some qualified coating failure, which could potentially contribute to the total debris in the Containment, is attributed to poor surface preparation or exposure to temperatures above the qualified intermittent or continuous temperature rating of the material. By including other potential debris in the Containment with the unqualified coatings in the Containment, the potential to exceed 25 square feet of the strainer surface blockage area is increased.

Walkdowns for insulation and other debris were conducted using procedure EN-DP-01507, Containment Walkdown For Potential Sump Screen Debris Sources, in support of the Emergency Sump Action Plan. Fibrous insulation was identified to exist in the plant which could potentially contribute to the clogging of the emergency sump after a design basis accident. Fibrous insulation was installed prior to recognition that the insulation could potentially represent a debris source. It was believed that as long as the insulation was clad in stainless steel jacketing, the fibrous insulation could be used in containment. Subsequently, fibrous insulation was determined to not be an immediate concern because the quantity of insulation that could be transported to the sump would not exceed the design basis limit of blockage across the sump. The additional fibrous insulation has not been evaluated to determine if it alone could have prevented adequate flow through the sump screen, however it had the potential to contribute to the blockage of the sump screen.

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APPARENT CAUSE OF OCCURRENCE (continued):

EMERGENCY SUMP GAP

There was no specific design criteria available when the plant was designed for the Emergency Sump. Subsequent guidance was generally met (Regulatory Guide 1.82, Revision 0, Water Sources for Long-Term Recirculation Cooling following a Loss-of-Coolant Accident), and the plant was licensed to operate. When that guidance was later changed (Generic Letter 85-22, Potential for Loss of Post-LOCA Recirculation Capability Due to Insulation Debris Blockage), Davis-Besse considered its original licensing basis to be acceptable.

Investigation conducted thus far on the gap found in the sump strainer (approximately 3/4-inch wide by 6-inches long) has determined that the opening has apparently existed since original construction. Design documents reflected the as built condition after installation, indicating that the opening was not an inadvertent breach of the screen. Subsequent inspections using the surveillance procedure, DB-SP-03134, Containment Emergency Sump Inspections, to evaluate the sump screen and debris grating, focused on the grating and did not require close examination of the screen. The intake screen over the sump is constructed of angle frame and grating to which the 1/4-inch stainless steel wire mesh screen is attached. This procedure did not explicitly require inspection to ensure all design bases functions were met.

ANALYSIS OF OCCURRENCE:

Following a LOCA, after the BWST inventory has been injected into the reactor vessel, the Emergency Sump is designed to provide continuous recirculation of the spilled reactor coolant back to the reactor vessel to remove residual decay heat. The sump is also designed to supply the containment spray pump with sufficient capacity to allow circulation of the sump water into the containment atmosphere to decrease the pressure and temperature in the containment vessel.

Although the CS system is not an ECCS system, it is interconnected to ECCS piping. Without sufficient flow through the sump, neither train of ECCS would be able to remove residual heat from the reactor nor could CS remove heat and fission product iodine from the containment atmosphere following a LOCA. This condition is being reported under 10 CFR 50.73 (a)(2)(v)(B) and (D) as an event or condition that could have prevented fulfillment of a safety function. Also, due to the emergency sump providing suction for both ECCS systems and CS systems, a single condition - the emergency sump clogging - could cause at least one train in CS and ECCS to become inoperable. The emergency sump clogging would therefore also meet the requirement for reportability due to two independent trains or channels to become inoperable (both ECCS trains and both CS trains) in a single system. Due to the conditions stated above the potential for the emergency sump being incapable of performing its designated safety function following a LOCA is being reported under 10 CFR 50.73 (a)(2)(vii) common-cause inoperability of independent trains or channels.

The potential exists that debris larger than design allowed 1/4-inch could pass through the screen due to the gap (3/4-inch wide by 6-inch long) which exists in the emergency sump structure and possibly clog the CS nozzles. This condition is

ANALYSIS OF OCCURRENCE (continued):

also being reported under 10 CFR 50.73 (a)(2)(v)(D) as an event or condition that could have prevented fulfillment of a safety function.

Both Technical Specification 3.5.2 (two independent ECCS subsystems) and Technical Specification 3.6.2.1 (two independent CS systems) require an operable flow path capable of taking suction from the emergency sump during the recirculation phase of operation to be considered operable for each subsystem. Due to the potential to be outside Technical Specification 3.5.2 and Technical Specification 3.6.2.1, this condition is being reported in accordance with 10 CFR 50.73 (a)(2)(i)(B) as operation or condition prohibited by Technical Specifications.

With the ECCS inoperable there is no other means of providing coolant to the core to remove residual decay heat following a LOCA.

As stated above, the CS is designed to remove heat (and fission product iodine) from the containment atmosphere after a LOCA. With the emergency sump inoperable, this function of the CS could not be performed.

The analyses performed for the emergency sump relative to debris generation and transport inside containment were evaluated for future operability conditions. The evaluations represent an assessment of potential sources of debris which will remain in the containment building and could contribute to potential sump blockage with respect to the new emergency sump strainer.

A debris generation analysis was performed to identify and quantify potential sources for emergency sump strainer blockage, through the use of field walkdown data, design documents, industry related documents and standard industry practices. The debris generation analysis was then used as a direct input to the transport analysis. The transport analysis then evaluates how much of the potential debris may migrate to the emergency sump strainer. This data is important in determining the head loss that could potentially be present at the sump after a LOCA. Calculations have been performed which document that debris remaining in the containment will not result in unacceptable head loss at the newly modified emergency sump strainer.

After the debris and transport calculations were finalized, conditions were identified in that additional unqualified alkyd paint existed in containment. The vendor used to perform the debris and transport analyses was contacted. The vendor documented the impact of the revised unqualified coatings estimate in the emergency sump strainer head loss calculation is conservative and with the unqualified alkyd paint discovered the actual conditions are bounded by the analyzed conditions. Also, conditions were identified (Condition Report 2003-02840) in the analysis used to calculate the Net Positive Suction Head (NPSH) margin that are expected to require a revision to the calculation. Initial assessments of the conditions indicate that the calculation conclusions remain valid.

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ANALYSIS OF OCCURRENCE (continued):

The transport analysis was analyzed for two separate accident scenarios: 1) a large-break LOCA involving a hot-leg break on top of the steam generator and 2) a large-break LOCA involving a hot-leg break inside the reactor annulus. The first case was selected to evaluate a LOCA with maximum potential debris loading on the new, fully intact, emergency sump strainer. The second case was selected because scenarios that could potentially damage a portion of the emergency sump strainer were identified. Case 2 was evaluated assuming the destruction of the entire lower strainer. Of these two scenarios, the break atop the steam generator was found to be more limiting from a strainer performance perspective (maximum head loss) because of the lack of significant debris generation in Case 2. A number of parametric evaluations were also performed to ascertain the sensitivity of the calculated head loss to variations in: fibrous debris quantity, quantity of unqualified coatings, quantity of dirt/dust assumed to be in containment, quantity of miscellaneous debris, and the temperature of the sump water. The results of these parametric evaluations demonstrate additional margin in the analysis to accommodate increased values for each of the debris source terms without significantly increasing strainer head loss.

CORRECTIVE ACTIONS:

Below are corrective actions that have either already been implemented or are planned to occur prior to restart.

UNQUALIFIED COATINGS AND OTHER DEBRIS

Coatings in the Containment have been inspected through walkdowns and coating evaluations using Nuclear Energy Institute 02-01, "Condition Assessment Guideline: Debris Sources Inside Containment" guidance. The evaluations were conducted to determine if the coatings applied within the containment meet containment qualification requirements, the condition of the applied coatings, and the appropriate course of action to repair failed/degraded coatings in containment. Debris generation and transport analyses have been evaluated to determine how much of the potential debris will make its way to the emergency sump strainer and to calculate the head loss due to this debris. As stated above, the analyses performed document that the debris remaining in containment will not result in unacceptable head loss at the newly modified emergency sump strainer. However, after the debris and transport analyses were finalized, conditions were identified with the NPSH margin calculation and the amount of unqualified coatings discovered in containment. The conditions identified with the NPSH margin are expected to require a revision to the calculation, however, initial assessments indicate that the conclusions remain valid. It was also concluded that actual conditions are bounded by the analyzed conditions in the assessment of the additional unqualified alkyd coatings that were discovered in containment.

Unqualified coating material on the Core Flood tanks, the Reactor Vessel Head Service Structure and Service Water piping has been removed. Design basis accident qualified coating material has been applied to these components. Remaining components, which are coated with unqualified coating systems and have not been reworked have been identified and will be tracked in the unqualified

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CORRECTIVE ACTIONS (continued):

coating inventory. The inventory identifies the item, approximate surface area, associated asset, location of the item within the Containment, and associated Engineering Change Document and Work Order, if applicable.

Failed/degraded qualified coatings are being reworked in accordance with coating specification A-024Q.

A Nuclear Safety-Related Coatings Program will be developed and maintained for all coating material application to structures and components located within the Containment. This program will have an owner who will have the responsibility to oversee specification of coatings, coating application and maintenance activities within the Containment, coating condition assessments, and reviews of coated components being installed in the Containment. The owner and personnel involved with containment coating, plant modification, work planning and component procurement activities will receive appropriate training.

Walkdowns to determine potential debris material have been performed. Fibrous insulation has been evaluated for removal from the containment. The fibrous insulation, left in the containment, will not exceed the design criteria of the new sump strainer. To prevent reoccurrence, the specification allowing fibrous insulation was altered to require each future application of fibrous insulation inside containment to be evaluated for acceptability.

EMERGENCY SUMP GAP

The old sump screen has been removed, the field work for the new strainer is complete, and the remainder of the emergency sump strainer modification is nearing completion. The modification has expanded the screen surface area from the previous 50 square feet available to approximately 1200 square feet of available area. As a part of this plant modification, the design basis of the new strainer and the ECCS performance post LOCA will be documented. This includes a calculation of the post-LOCA water level in containment, evaluation of the Net Positive Suction Head margin in the system, and evaluation of the effects of debris clogging on the sump strainer. The objective of the sump screen modification is to restore operability and to add margin by increasing the surface area of the Containment Emergency Sump Strainer.

Containment Emergency Sump Inspection Procedure, DB-SP-03134, and emergency sump drawings are also being updated due to the modification. Due to the removal of the previous sump screen, the drawing in place which permitted the gap is no longer valid, therefore, the procedure that focused on the grating will be revised and new sump screen drawing(s) will be created as a part of the modification process.

FAILURE DATA:

There have been no previous LERs written in the past 5 years on the potential inoperability of the ECCS and CS due to the emergency sump being incapable of performing its designated safety function, following a LOCA. An issue was

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FAILURE DATA (continued):

identified in May of 1998 where gaps existed between the base of the emergency sump screen and the concrete floor. Lead bricks were placed around the base of the sump screen as a design change to block the gaps. This issue was captured in Inspection Report 50-346/98009.

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

NP-33-02-005

CR 2002-02846, CR 2002-05461,
CR 2002-06017, CR 2002-06018,
CR 2002-06019, CR 2002-06020,
CR 2002-06021, CR 2003-02840