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NP-33-99-003-01

Docket No. 50-346

License No. NPF-3

February 13, 2004

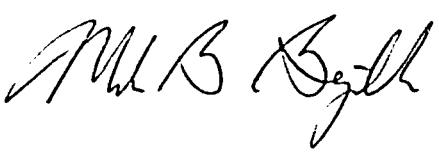
United States Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Ladies and Gentlemen:

LER 1999-003-01
Davis-Besse Nuclear Power Station, Unit No. 1
Date of Occurrence – July 27, 1999

Enclosed please find revision 1 to Licensee Event Report (LER) 1999-003, which was submitted to provide written notification of a condition prohibited by Technical Specification 3.4.9.2 in which the cooldown limits for the Pressurizer were exceeded during a plant shutdown. This revision modifies the failure data section of the LER to correct a discrepancy discovered during the 10CFR50.9 review project as described in Letter Serial Number 1-1330. This LER revision is being submitted in accordance with 10CFR50.73(a)(2)(i)(B) as a condition or operation prohibited by the Technical Specifications. Commitments associated with this LER are listed in the Attachment.

Very truly yours,



GMW/s

Attachments

cc: Regional Administrator, USNRC Region III
DB-1 NRC Senior Resident Inspector
DB-1 Senior Project Manager, USNRC
Utility Radiological Safety Board

IE22

Docket Number 50-346
License Number NPF-3
NP-33-99-003-01
Attachment
Page 1 of 1

## 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 |
|---|---|
| Revise procedure DB-OP-06903 to provide necessary information to the operators for cooling down the pressurizer. | Complete |

NRC FORM 366 (7-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

# LICENSEE EVENT REPORT (LER)

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

| 1. FACILITY NAME | 2. DOCKET NUMBER | 3. PAGE |
|---|---|---|
| Davis-Besse Unit Number 1 | 05000346 | 1 OF 3 |

**4. TITLE**

Failure to Perform Engineering Evaluation for Pressurizer Cooldown Rate Exceeding Technical Specification Limit

| 5. EVENT DATE | | | 6. LER NUMBER | | | 7. REPORT DATE | | | 8. OTHER FACILITIES INVOLVED | |
|---|---|---|---|---|---|---|---|---|---|---|
| MO | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REV NO | MO | DAY | YEAR | FACILITY NAME | DOCKET NUMBER |
| 07 | 27 | 1999 | 1999 | -- 003 -- | 01 | 02 | 13 | 2004 | | 05000 |
| | | | | | | | | | FACILITY NAME | DOCKET NUMBER 05000 |

| 9. OPERATING MODE | 1 |
|---|---|
| 10. POWER LEVEL | 100 |

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

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

**12. LICENSEE CONTACT FOR THIS LER**

| NAME | TELEPHONE NUMBER (Include Area Code) |
|---|---|
| Gerald M. Wolf, Staff Engineer - Licensing | (419) 321-8001 |

**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

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

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

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


On July 27, 1999, it was determined that an excessive cooldown of the pressurizer occurred during the plant shutdown for the mid-cycle outage that was conducted from April 23 to May 10, 1999. Initial resolution of the indicated overcooling condition was determined to not be valid because pressurizer pressure remained elevated. However, further review determined the observed indication was valid. The pressurizer cooldown was 160 degrees F/hour, which exceeded the limit of 100 degrees F/hour permitted by Technical Specification (TS) Limiting Condition for Operation 3.4.9.2. The Actions for the TS required that an engineering evaluation be performed to determine the effects of an out-of-limit condition on the fracture toughness of the pressurizer. This was not performed prior to startup from the mid-cycle outage, and was reportable as operation in a condition prohibited by TS pursuant to 10 CFR 50.73(a)(2)(i)(B). An evaluation performed by the Nuclear Steam Supply System vendor concluded that there was no effect on the structural integrity or fracture toughness of the pressurizer.

The cause of this event was determined to be inadequate procedural guidance during cooldown. Required reading was provided to operators concerning the evaluation of the event. The procedure for cooling down the reactor coolant system and the pressurizer was modified to provide the necessary information.

| FACILITY NAME (1) | DOCKET (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Davis-Besse Unit Number 1 | 05000346 | 1999 | -- 003 -- | 01 | 2 OF 3 |

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

DESCRIPTION OF OCCURRENCE:

On July 27, 1999, it was determined that the resolution for a Condition Report (CR) initiated during the mid-cycle outage (conducted from April 23 - May 10, 1999) was not correct. The CR documented an indicated excessive cooldown rate for the pressurizer [AB-PZR] during plant shutdown for the mid-cycle outage. The cooldown was indicated by a temperature element (TE RC15) [AB-TI] located at a thermowell 82 inches above the low level instrument tap. The indicated temperature from TE RC15 was determined not to be valid because a steam bubble remained in the pressurizer and pressure had not decreased dramatically. It was decided that the correct pressurizer temperature should be the saturation temperature based on Reactor Coolant System pressure, and the CR requested review and evaluation of the validity of using TE RC15 for pressurizer cooldown indication.

Subsequent review of the CR showed that while raising water level in the pressurizer in preparation for achieving cold shutdown, the pressurizer temperature was approximately 400 degrees F with pressure approximately 210 psig. Colder water entered the pressurizer via the surge line and makeup pumps and, because of the location of the temperature element, there was an indicated cooldown to 240 degrees F in a one hour period. The review determined that stratification of the pressurizer fluid existed. Therefore, the indication accurately showed cooldown of the pressurizer lower shell and is a valid indication. The pressurizer cooldown rate of 160 degrees F/hour exceeded the 100 degrees F/hour limit permitted by Technical Specification (TS) Limiting Condition for Operation (LCO) 3.4.9.2 in effect at the time of occurrence (TS 3/4.4.9.2 has since been relocated to the DBNPS Technical Requirements Manual per License Amendment 245). The Actions for the TS LCO required that an engineering evaluation be performed to determine the effects of the out-of-limit condition on the fracture toughness of the pressurizer. This evaluation was not performed prior to startup from the mid-cycle outage, and was reportable as operation in a condition prohibited by TS pursuant to 10 CFR 50.73(a)(2)(i)(B). An evaluation performed by the Nuclear Steam Supply System vendor, Framatome Technologies, concluded that the cooldown rate experienced had no effect on the pressurizer structural integrity, specifically, the fatigue life and fracture toughness. Therefore, continued operation is acceptable.

APPARENT CAUSE OF OCCURRENCE:

The guidance provided in the Plant Shutdown and Cooldown Operating Procedure, DB-OP-06903, did not include sufficient information to provide operators with the instrumentation designation needed to monitor pressurizer cooldown limits during these evolutions. The correct instrumentation designation, TE RC15, is cited in DB-OP-06003, Pressurizer Operation, but is not referenced in DB-OP-06903. Operators, therefore, made an assumption of pressurizer cooldown indication that was contrary to procedures, but was also not adequately addressed in the appropriate procedures.

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME (1) | DOCKET (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Davis-Besse Unit Number 1 | 05000346 | 1999 | -- 003 -- | 01 | 3 OF 3 |

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

ANALYSIS OF OCCURRENCE:

The Nuclear Steam Supply System vendor, Framatome Technologies, performed an evaluation of the pressurizer overcooling event for any effect on the pressurizer structural integrity. The results of the evaluation concluded that there was no effect on the structural integrity, and specifically, no effect on fatigue life or fracture toughness, of the pressurizer.

CORRECTIVE ACTIONS:

Operators were provided required reading of the evaluation of this event and use of TE RC15 indication for monitoring pressurizer cooldown. Procedure DB-OP-06903 was modified to provide necessary information to operators for cooling down the pressurizer.

FAILURE DATA:

Within the three years prior to this event, there were no Licensee Event Reports documenting violations of the Technical Specification cooldown limits of the Reactor Coolant System or the Pressurizer.

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

NP-33-99-003-01 CR 1999-1277