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An Exelon Company

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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

THREE MILE ISLAND UNIT I (TMI UNIT 1)
OPERATING LICENSE NO. DPR-50
DOCKET NO. 50-289

SUBJECT: BIENNIAL 10 CFR 50.59 AND COMMITMENT REVISION REPORT FOR
2002 AND 2003

Enclosed are the 2002-2003 Biennial 10 CFR 50.59 and Commitment Revision Report as required by 10 CFR 50.59 (d)(2) and SECY-00-0045 (NEI 99-04).

There are no regulatory commitments contained in this transmittal.

If you have any questions or require additional information, please contact John Tesmer, of Regulatory Assurance, at 717-948-8477.

Sincerely,



George H. Gellrich
Plant Manager

GHG/awm

Enclosure

cc: Administrator, Region I
TMI-1 Senior Resident Inspector
File 04080

IE47

**THREE MILE ISLAND
UNIT 1
DOCKET NO. 50-298
BIENNIAL 10CFR 50.59 AND COMMITMENT REVISION REPORT**

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**AMERGEN ENERGY
THREE MILE ISLAND
UNIT 1
DOCKET NO. 50-289**

**BIENNIAL 10CFR 50.59 REPORT
JANUARY 1, 2002 THROUGH DECEMBER 31, 2003
10CFR50.59 EVALUATION SUMMARIES**

Modifications

Title: CW Chemical Addition System Improvements (ECR 02-01070)

Year Implemented: 2002

Evaluation Number: SE-000564-001

Brief Description: Installation of Circulating Water Chemical Treatment

Summary of Evaluation:

A new modification was implemented to allow injection of a different type of chemical treatment into the Circulating Water system to control MIC (Microbiologically Induced Corrosion), growth of slime on equipment and piping surfaces, and eliminate bacteria and algae. The treatment uses four chemicals, NaOCl (sodium hypochlorite), Sodium Bromide, AEC, and HPS-1 in addition to H₂SO₄ (Sulfuric Acid). NaOCl is the chemical that is the source for chlorine to help kill the bacteria and algae.

The chemical addition system is not safety related or required for safe shutdown of the plant. The chemicals, each by themselves, do not pose a hazard. The mixing of NaOCl and H₂SO₄ forms the biocide chlorine. This could potentially affect control room habitability and thus is the item of concern.

Generation of chlorine, by design within the CW system is not an issue. The chemicals, NaOCl and H₂SO₄, are physically separated by the biocide storage building (for H₂SO₄) and the containment (for NaOCl). The two structures were designed to provide physical separation to prevent uncontrolled mixing of the chemicals. The piping to transfer the NaOCl to the mixing eductor is double wall CPVC pipe to minimize the potential for leakage to the environment. The NaOCl and H₂SO₄ piping systems are physically separated from each other and drain paths are designed to minimize the potential for the mixing of these chemicals from pipe failure.

Warnings and procedure verifications were implemented to prevent the potential mixing of these chemicals. In addition, signs were posted at the tanks and connections to warn of these hazards.

The activity does not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR.

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Procedure Changes

Title: Interim procedure change for Manual control of RC Pump Seal Injection flow.

Year Implemented: 2002

Evaluation Number: SE-945100-388

Brief Description: An interim change to TMI-1 Operations procedure for manual control of seal injection during troubleshooting of the hand-auto station.

Summary of Evaluation:

Makeup valve MU-V-32 provides control for Reactor Coolant Pump Seal injection. Automatic control of the valve became erratic in November 2002. Automatic control of seal injection is described in FSAR section 9.1.2.1. The remaining analysis in FSAR Section 9 does not depend on this condition. The activity was to operate the seal injection system in manual during troubleshooting and repair (a maintenance activity).

Manual seal injection control was determined to be adequate because alarms and indications were available, there were no protective interlocks to be defeated, instrument qualification requirements were not affected, and no new instruments that were not qualified to function in the environmental conditions were introduced. Errors in manual control were determined to not be irreversible. The adjustments that might be required could be made with minimum manning during an emergency condition. Manual control of seal injection was described in plant procedures.

The activity does not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence

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Title: Material Non-Conformance T2003-0002,
associated procedure change

Year Implemented: 2003

Evaluation Number: MNCR T2003-0002

Brief Description: An interim change to TMI-1 Operations procedure for isolating of the Reactor Coolant Inventory Tracking System.

Summary of Evaluation:

On January 23, 2003, a leak was discovered near RC-V-1197. The 50.59 evaluation evaluated continued plant power operations with RC-V-1196 and 1197 closed. The valves were closed to reduce the RCS leakage into the RB atmosphere. The evaluation for conditional release addresses the following issues:

- The closing of these valves rendering both channels of the RCITS System inoperable.
- The closing of RC-V-1196 and RC-V-1197 potentially compromises the ability to prevent pressure locking from occurring on DH-V-1, DH-V-2, and the piping between the two valves.

The RCITS system is one of several means that is available to be used by Operators in the event of a large break LOCA or the maximum hypothetical accident to monitor the water inventory of the Reactor Coolant System. The system is not credited in the UFSAR as being a sole or required source of information upon which Operators should base or take accident mitigation actions.

TS 3.24 states that if both channels of the RCITS system are inoperable and at least one channel cannot be restored within 7 days, details of the condition shall

be provided in the Monthly Operating Report including cause, action being taken and projected date for the return of the system to an operable status.

The activity does not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not create the possibility of an accident of a different type than any previously evaluated in the UFSAR. The activity does not create the possibility of a malfunction of an SSC important to safety with a different result than any previously evaluated in the UFSAR. The proposed activity does not result in a design basis limit for fission product barrier as described in the UFSAR being exceeded or altered. This is not a change to a method of evaluation.

Title: RPS Testing with Channel A in Bypass

Year Implemented: 2003

Evaluation Number: SE-000641-034

Brief Description: A procedure change to TMI-1 Surveillance procedure to allow RPS testing of a differential pressure transmitter used for Reactor Coolant System Flow.

Summary of Evaluation:

RC14A-DPT1 ("A" Loop RCS flow to the "A" RPS Cabinet) drifted high. Over a period of several hours on 2/20/03, the flow signal increased from about 71 Mlbm/hr to 73 Mlbm/hr. The drift was in the non-conservative direction. As a conservative measure, A RPS cabinet was declared inoperable and Channel A was placed in manual bypass.

TMI-1 Technical Specification requires periodic surveillance testing of RPS Channels and Power Range Nuclear Instrument calibration. The surveillance test normally places the channel under test in Manual Bypass and substitutes test signals for the normal channel inputs. Channel A will be tested with A Channel in Manual Bypass. Channel B, C or D, RPS will be tested with the associated channel Tripped while Channel A remains in Manual Bypass. Tripping the channel under test while Channel A is in Bypass complies with Tech Spec Table 3.5-1 since two channels will be operable and one is tripped. Degree of redundancy of one is met with the channel under test in a tripped status. Testing

the channel while it is in the Tripped status does not affect the validity of the test. All the features are fully tested in accordance with Technical Specification Table 4.1-1.

The activity does not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not create the possibility of an accident of a different type than any previously evaluated in the UFSAR. The activity does not create the possibility of a malfunction of an SSC important to safety with a different result than any previously evaluated in the UFSAR. The proposed activity does not result in a design basis limit for fission product barrier as described in the UFSAR being exceeded or altered. This is not a change to a method of evaluation.

Title: Procedure to Troubleshoot RC14A-DPT1 Drift

Year Implemented: 2003

Evaluation Number: SE-000641-035

Brief Description: A procedure change to TMI-1 Operations procedure to allow troubleshooting of a differential pressure transmitter used for Reactor Coolant System Flow.

Summary of Evaluation:

RC14A-DPT1 ("A" Loop RCS flow to the "A" RPS Cabinet) drifted high. Over a period of several hours on 2/20/03, the flow signal increased from about 71 Mlbm/hr to 73 Mlbm/hr. The drift was in the non-conservative direction. As a conservative measure, A RPS cabinet was declared inoperable and Channel A was placed in manual bypass.

Troubleshooting the affected channel with that channel in Manual Bypass and another channel in a Tripped condition does not affect the validity of the maintenance, nor does it conflict with the UFSAR description. The system was designed to perform the testing while the channel is in bypass to reduce the risk of tripping the reactor. Performing a maintenance activity on a RPS channel while the channel is tripped meets the Tech Spec Surveillance requirement and does not cause undue risk of a reactor trip.

This procedure change does not increase the frequency of occurrence of an accident previously evaluated in the UFSAR since the requirements of the LCO are met and the ability of the Reactor Protection System to respond to a valid condition are not compromised. Since the degree of redundancy requirement is met the consequences of equipment failure in other channels meets the assumptions in the UFSAR.

The activity does not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not create the possibility of an accident of a different type than any previously evaluated in the UFSAR. The activity does not create the possibility of a malfunction of an SSC important to safety with a different result than any previously evaluated in the UFSAR. The proposed activity does not result in a design basis limit for fission product barrier as described in the UFSAR being exceeded or altered. This is not a change to a method of evaluation.

Title: Procedure Changes for RPS Testing with RPS Channel B in Manual Bypass due to NI-6 input declared inoperable

Year Implemented: 2003

Evaluation Number: SE-000623-004

Brief Description: A procedure change to TMI-1 Surveillance procedure to allow testing while 'B' channel of RPS is in manual bypass.

Summary of Evaluation:

On March 18th 2003, spiking was observed on NI-6 from its nominal 100% reading to slightly above 101% reactor power. Another nuclear instrument was selected for ICS control and RPS Channel B was tripped to maintain a degree of redundancy of one. TMI-1 Technical Specifications require periodic surveillance testing of RPS channels and Power Range Nuclear Instrumentation calibration. The surveillance test normally places the channel under test in Manual Bypass and substitutes test signals for the normal channel inputs. RPS Channel B will be tested with the channel in Manual Bypass. RPS Channels A, C and D will be tested with the channel tripped while RPS Channel B remains in Manual Bypass. Tripping the channel under test while RPS Channel B is in Manual Bypass

complies with Technical Specification 3.5-1 since two channels will be operable and one is tripped. Degree of Redundancy of One is met with the channel under test in a tripped status. Testing the channel while it is in the tripped status does not affect the validity of the test. All features are fully tested in accordance with Technical Specification table 4.1-1.

The activity does not result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the likelihood of occurrence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of an accident previously evaluated in the UFSAR. The activity does not result in more than a minimal increase in the consequence of a malfunction of an SSC important to safety previously evaluated in the UFSAR. The activity does not create the possibility of an accident of a different type than any previously evaluated in the UFSAR. The activity does not create the possibility of a malfunction of an SSC important to safety with a different result than any previously evaluated in the UFSAR. The proposed activity does not result in a design basis limit for fission product barrier as described in the UFSAR being exceeded or altered. This is not a change to a method of evaluation.

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**BIENNIAL COMMITMENT REVISION REPORT
JANUARY 1, 2002 THROUGH DECEMBER 31, 2003**

Letter Source: LER 98-010-00
Exelon Tracking No.: 1920-98-20496.002
Nature of Commitment: Adjust alarm setpoint for grid low voltage during single transformer operation.

Summary of Justification:

TMI replaced the Unit Auxiliary Transformers during the T1R14 refueling outage in October 2001. These GE Prolec Auxiliary Transformers have load tap changers that allow voltage control on the 4160-volt Class 1E busses. Calculation C-1101-700-E510-010 was revised in December 2001 with 'as-tested' impedance values. The revised calculation has removed restrictions on low grid voltage from single transformer operation.

Letter Source: NUREG 0680, IEB 79-05A ITEM 4
Exelon Tracking No.: 1980T0075
Nature of Commitment: Re-verify plant conditions using alternate indications

Summary of Justification:

Commitments were made for NUREG 0680 concerning Emergency Operating Procedure event mitigation strategies in 1980. TMI subsequently committed in 1989 to prepare and maintain the Emergency Operating procedures in accordance with the B&W owners group GEOG Technical Basis Document (TBD). Commitment was made per correspondence 5450-89-0103 (Exelon tracking number 1989T0014). As a result, commitments made per NUREG 0680 have been superceded by the commitment to the TBD.

Letter Source: NUREG 0680, IEB 79-05C ITEM 5
Exelon Tracking No.: 1980T0078
Nature of Commitment: B&W Small Break Operating Guidelines

Summary of Justification:

Commitments were made for NUREG 0680 concerning Emergency Operating Procedure event mitigation strategies in 1980. TMI subsequently committed in 1989 to prepare and maintain the Emergency Operating procedures in

accordance with the B&W owners group GEOG Technical Basis Document (TBD). Commitment was made per correspondence 5450-89-0103 (Exelon tracking number 1989T0014). As a result, commitments made per NUREG 0680 have been superceded by the commitment to the TBD.

Letter Source: TMI Inspection Report IR 84-06
Exelon Tracking No.: 1984T0083
Nature of Commitment: Set load tap changers to meet requirement of Degraded Grid analysis

Summary of Justification:

TMI committed to the NRC (within the inspection report) to change taps on the Auxiliary Transformers UATIA and UATIB from 230 kV to 224.25 kV during power operations. TMI replaced the Unit Auxiliary Transformers during the T1R14 refueling outage in October 2001. These GE Prolec Auxiliary Transformers have load tap changers that allow voltage control on the 4160-volt Class 1E busses. Calculation C-1101-700-E510-010 was revised in December 2001 with 'as-tested' impedance values. The load tap changers no longer require setting of manual taps during power operation. As a result, this is a historical commitment.

Letter Source: NUREG 0737 I.D.1
Exelon Tracking No.: 1984T0106
Nature of Commitment: Throttling of building spray flow

Summary of Justification:

Commitments were made for NUREG 0737 to satisfy building spray NPSH requirements. Procedure 1210-7 was changed to reduce the runoff limit of 1800 gpm to a value of 1750 gpm. In November 2001, TMI replaced the Building Spray flow orifice to maintain flow <1750 GPM with modification ECR TM 01-00406. Operator manual throttling of building spray is no longer required, and this portion of the commitment is historical.

Letter Source: NUREG 0737 III.D.3.4

Exelon Tracking No.: 1987T0064

Nature of Commitment: Control Room Habitability Damper And Fan Ops

Summary of Justification:

Commitments were made for NUREG 0737 to satisfy control building habitability requirements. To maintain a positive pressure in the control room, operators were required to take manual control of damper AH-D-39 on a single failure of damper AH-D-28. In 2000, TMI implemented modifications MD-J007-001 and MD-J007-002. These modifications removed the single failure vulnerability of AH-D-28. AH-D-39 became a manual damper. As a result, operator action to position damper AH-D-39 is no longer required to maintain a positive pressure.

End of Commitment Revision Report
