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April 26, 1990
C311-90-2053

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

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
10 CFR 50.59 Report for 1989

In accordance with the requirements of 10 CFR 50.59, enclosed are summaries of the changes to TMI-1 systems and procedures, for the period of January - December 1989, as described in the Safety Analysis Report.

Sincerely,

H. D. Hukill
Vice President & Director, TMI-1

HDH/RDW/spb:2053

cc: T. Martin
R. Hernan
F. Young

Enclosure

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Procedure: OP 1107-3 Diesel Generator
(PCR 1-OS-89-0053)

SP 1303-4.16 Emergency Power System
(PCR 1-OS-89-0054)

Description of Change:

Revise the method of determining diesel generator reliability.

Safety Evaluation Summary:

Previous diesel generator failure data was determined using the guidance of Regulatory Guide 1.108. The procedures were revised to reflect the use of NSAC 108 for the emergency diesel generator reliability determination program. The NRC was also advised of this change via GPU Nuclear letter C311-89-2018 dated April 17, 1989.

Procedure: EP 1203-42 Inadvertent Closure of a Main Steam Isolation Valve
(PCR 1-OS-88-0676)

Description of Change:

The procedure was revised so that the reactor is not manually tripped immediately on inadvertent closure of a Main Steam Isolation Valve (MSIVs).

Safety Evaluation Summary:

Two (2) MSIVs are provided for each OTSG with stroke times of approximately two (2) minutes. Analysis by General Electric (i.e., the turbine generator supplier), Babcock and Wilcox (NSSS), and GPU Nuclear showed that an immediate manual reactor trip was an inappropriately stringent action in response to such an event. Manual power reduction to less than or equal to 90% power is the appropriate immediate manual action. If the MSIV cannot be reopened, a plant shutdown will be scheduled for repair.

Procedure: Special Temporary Procedure 1-89-0001 Replacement of Instrument Air Drier Manifold and Pipe Assembly

Description of Change:

This temporary procedure provided guidance to perform corrective changes to the instrument air drier during normal plant operation.

Safety Evaluation Summary:

The evaluation provides the bases for operation for a limited period of time while bypassing the instrument air drier during normal plant operation.

Procedure: AP 1038 Administrative Controls - Fire Protection Program
(PCRs 1-EG-89-0006, 1-EG-89-0009, 1-EG-89-0014, 1-EG-89-0033, and 1-EG-89-0044).

Description of Change:

PCR 1-EG-89-0006 incorporated the results of Plant Engineering Evaluation 87-175-M "Failure Rate of Exide Emergency Lights." This resulted in more frequent and additional testing of emergency lights under preventive maintenance and operations surveillance procedures. This change also added a reference to a new operation surveillance for quarterly testing of non-Appendix R emergency lighting in out-buildings.

PCRs 1-EG-89-0009 and 0014 made the following changes: a) updated procedure references; b) transfer ownership of the TMI-2 fire pump to TMI-1 and; c) require that fire pump testing intervals be on a monthly basis vice a "staggered test basis" which is consistent with previous practice.

PCR 1-EG-89-0033 made the following changes: a) implemented a program to inspect, test, and maintain the TMI-2 fire pump as an emergency, backup pump under TMI-1 control; b) added references to cover six (6) year interval preventive maintenance inspections on fire pump discharge check valves; c) added references to Nuclear Mutual Limited (NML) Standards as part of GPU Nuclear's transfer of TMI's property insurance from American Nuclear Insurers to NML and; d) added a reference to TDR-728 on Control Room habitability since that evaluation was the basis for preventive maintenance checks on certain fire doors.

PCR 1-EG-89-0044 made the following changes: a) added a note on minimum run times required during monthly fire pump testing; b) updated procedure references and; c) updated organizational positions and titles.

Safety Evaluation Summary:

The above changes had no adverse affect on the ability to achieve, maintain, and monitor safe shutdown in the event of a fire. Therefore, these changes do not represent an unreviewed safety question.

Modification: Installation of New Float Traps and Strainers on Instrument Air (IA) and Service Air (SA) Receiver Tanks (BA 112199)

Description of Modification:

This modification replaced the inverted bucket traps on both IA and SA receivers with Y-type strainers and float traps. The previous bucket traps were misapplied for this end use.

Safety Evaluation Summary:

The change to system performance is that the new traps work more effectively at removing the accumulated moisture from the receiver tanks since they are the correct component for this type application. The new components do the same functions of the original components during normal and emergency conditions.

Modification: Hittman Hardpipe Valve & Installation (BA 123085)

Description of Modification:

An air operator was installed on existing valve WDL-V-636 in order to allow transfer of concentrated waste without resulting in personnel radiation exposure. Additionally, a new air operated valve (i.e., WDL-V-639) was installed to allow flushing of the Hittman Hardpipe without requiring shutdown of the concentrated waste storage tank recirculation system.

Safety Evaluation Summary:

The safety function of the system affected by this modification is the reduction of personnel radiation exposure. The new valve operator and the new control valve do not interface with any systems that provide a safety function. The new valve and valve operators allow operation of the Hittman System without affecting other radiation disposal systems, and do not interlock with any Nuclear Safety Related equipment.

Modification: Intermediate Closed Cooling Drain Valve
Modification (BA 128087)

Description of Modification:

This modification provides a drain valve on the ICCW line to the Control Rod Drives (CRDs) to facilitate drainage prior to disconnect of the line for reactor head removal during an outage. The drain line improves good housekeeping practices in the area, minimizing the potential spread of contamination.

Safety Evaluation Summary:

The installation of the drain line does not affect the function or operation of the ICCW system. The valve is only used during a plant shutdown before removal of the reactor head. The valve will normally be closed and the pipe cap installed. The ICCW system is not required to perform any design basis accident function except containment isolation. The modification has no effect on containment isolation functions.

Modification: NR-V-18/19 & SR-V-2 Jog Control (BA 128966)

Description of Modification:

In order to prevent the Secondary River (SR) pumps from run-out, valve SR-V-2 was throttled so that desired discharge pressure was maintained at the SR pumps. To accomplish this, the valve had to be modified so that it is jog control. Additionally, the sensing point of SR-PT-134 was moved upstream from valve SR-V-2 in order to enable the monitoring of the pressure at the SR pumps. Nuclear Services River Water (NSRW) valves NR-V-18 and NR-V-19 were converted to jog control so that desired pressure was maintained in the NSRW System during periods of low heat loads (i.e., cold shutdown).

Safety Evaluation Summary:

This modification did not reduce a margin of safety since the requirement of maintaining a flow path to the mechanical draft cooling towers was not altered by this modification. This modification did not adversely affect nuclear safety or safe plant operations since the valve position could be monitored through the nuclear river pressure monitor and its position was governed by operating procedure. This modification increased system reliability by preventing pump run-out.

Modification: Reclassification of the River Water Pumps
Lubrication Water System (BA 412014)

Description of Modification:

This modification installed a new lube water system for the river water pumps at TMI-1. The river water pumps lubrication water system uses two redundant water supply pumps that draw filtered water from the Service Water System and deliver it to the shaft bearings of the fourteen river water pumps via a system of headers and tubing. An evaluation was performed which determined that the River Water Pumps Lubrication Water System can be declassified from Nuclear Safety Related (NSR), Seismic I, to Regulatory Required (RR), Seismic II.

Safety Evaluation Summary:

The function of this system is to provide the river pump shaft bearings with a reliable source of clean water. It has been determined that the river water pumps serving safety-related functions can operate without the externally-supplied lubricating water provided by the river water pumps Lubrication System for the duration of a safe-shutdown. Therefore, this system does not have a safety function and has been appropriately reclassified as RR, Seismic II. The modification does not increase the probability of occurrence or the consequences of an accident. The higher quality water source will lengthen the river pump bearing life. Additionally, this reclassification of the external lubricating water supply system does not reduce the margin of safety for the affected river water pumps.

Modification: Installing Vent Valves in the Instrument Air Lines
(BA 412512)

Description of Modification:

This modification allowed testing of air accumulators for air operated valves. The scope of this modification was to install a vent valve in the air supply line to several air-operated valves in the following systems:

- o Intermediate Cooling Water System
- o Makeup and Purification System

Safety Evaluation Summary:

The purpose of this modification is to install a vent valve and, in some cases, an isolation valve on air lines for accumulators required to be tested. During testing, the Instrument Air Isolation Valve will be closed and the vent valve will be opened to simulate a loss of air. The modified portion of tubing is not safety related and is classified as "other." The installed vent valves are normally closed and will be used for test purposes only during refueling outages. This modification allows testing of accumulators and check valves required to perform the safety function of containmnet isolation. Failure of the vent valve modification does not affect the safety related function of the accumulator to stroke the containmnet isolation valves to their fail safe (closed) position. The modification, therefore, does not increase the probability of occurrence or consequences of a malfunction of equipment important to safety previously evaluated in the SAR.

Modification: Main Steam to Heated Post Isolation Valves
(BA 412528)

Description of Modification:

This modification installed isolation valves in the one (1) inch steam return lines of the main steam heated post supports to allow for individual line isolation of related piping during power operation.

Safety Evaluation Summary:

The main steam heated post supports system is designed to maintain the supports (i.e., allow thermal growth) for the Main Steam Safety Valve discharge line such that the main steam piping is not overstressed when the valves open. The addition of these valves will permit individual line isolation of the heated post supports to allow for maintenance of related piping during power operation. This modification does not increase the probability of occurrence or consequences of an accident, since the normally open valves do not affect system performance and the safety function of the heated post supports system. The design basis and system performance of the main steam to heated supports system is not changed. Isolating a train of the Main Steam Heated Post Supports also isolates one (1) pressure channel of the Heat Sink Protection System (HSPS). The isolation of a single HSPS pressure channel does not reduce a margin of safety since there are redundant channels.

Modification: Continuous Off Gas (COG) Iodine Sampling System
(CMR-89-027)

Description of Modification:

This modification replaced the originally installed COG continuous iodine sampler flowmeter (VA-FI-1107) with a lower range rotameter, including heat trace. This system is used to calculate correction factors for TMI-1 effluent releases from the COG. The original one (1) scfm sampling flow rate produced a velocity which was approximately eight (8) times greater than the COG discharge velocity, which affected the representativeness of the sample. To correct this design deficiency, a lower range rotameter was installed to allow adjustment of the sample flowrate. As a result, the velocity of the air stream entering the sample probe is approximately the same as the average velocity of the air stream in the discharge header. Additional heat trace was also installed at the sample rack and around the sample chamber.

Safety Evaluation Summary:

Replacement of the existing rotameter, and adjustment of the sample flowrate so that sample velocity is approximately equal to discharge velocity, minimizes sampling errors associated with an isokinetic system. The iodine sampling system is passive in nature, monitoring a gaseous release path. There are no interlocks associated with this system.

Modification: Convert Air Diaphragm Operated Penetration Pressurization (PP) Valves to Manual Handwheel Operated Valves (CMR 89-036)

Description of Modification:

This change converted PP valves PP-V100/103/132/135 to manual handwheel operated valves by switching valve bonnets. These valves were previously maintained in the open position with the air connections disconnected from the operator. In order to provide double isolation between the PP system and the RB purge valve interspaces, it was decided to maintain these valves closed. This would prevent the inadvertent pressurization of the RB purge valve interspaces if any of the PP system globe valves, PP-V210/211/213/213 leaked.

Safety Evaluation Summary:

This modification provides a more reliable containment isolation and was performed during plant shutdown. Thus, This modification did not adversely affect plant safety. Additionally, credit is not taken for the PP system to mitigate any accident scenario.

Modification: Spent Fuel Pool Vacuum Breaker (CM 0058M)

Description of Modification:

This modification raised the spent fuel pool vacuum breaker to the 349' elevation. The previous elevation caused drainage of the cask loading pit when it was at equal level with the spent fuel pool water level.

Safety Evaluation Summary:

The raising of the siphon breaker eliminates the potential for drainage and allows it to function in accordance with its FSAR design basis. The accident of concern is an inadvertent drainage of the fuel storage pool resulting from damage or improper drain lineups on the Spent Fuel piping. The elevated vent will allow the siphon breaker to prevent this accident.

Modification: Temporary Jumper to Enable Decay Heat (DH) Low Flow Alarm (D-2-3)

Description of Modification:

A temporary jumper was installed to bypass the Control Room alarm selection PB DH1-MS to allow the "A" DH low flow alarm to be operable.

Safety Evaluation Summary:

This modification was performed to allow a valid low flow alarm while operating in the "A" DH mode. This modification did not have any adverse effect on nuclear safety. This system has been returned to its original condition.

Modification: Temporary Jumper on Pressurizer Level/Heater

Description of Modification:

A temporary jumper was installed to allow operation of pressurizer heater groups 12 and 13 so that groups 3 and 4 could be disconnected because of the inoperability of 22 pressurizer heater elements in the lower bundle. Groups 12 and 13 were used as SCR control groups.

Safety Evaluation Summary:

Pressurizer Heater Groups 3,4,12,and 13 are Not Important to Safety and are not required for safe shutdown of the plant. The temporary jumper was removed. Groups 12 and 13 were restored to operable status, groups 3 and 4 remained out of service.

Modification: Temporary Electrical Modification for Breaker 1N-12

Description of Modification:

30 amp trip fuses were pulled for the 600 amp cable tie 1N-12. This prevented the 1N-12 breaker from tripping when the 1N-02 breaker was open and removed for testing.

Safety Evaluation Summary:

The 1N and 1C busses do not supply power to any safety related equipment. The 1N bus is fed from the 1D 4160 volt bus which is Nuclear Safety Related. The plant was shutdown for refueling; thus, this modification did not increase the consequences of an accident or the possibility of an accident as defined in the SAR. The margin of safety as defined in the basis for any Technical Specification was not reduced. The breaker has been returned to its original condition.

Modification: Temporary Modification to Perform Main Generator/Transformer Trip Testing

Description of Modification:

The trip circuit from the feedwater pumps to the main turbine was isolated to do trip testing. This was performed by opening link XCC cabinet terminal block AA terminal #12 wire, #MTT2 to do a functional trip test.

Safety Evaluation Summary:

The link was opened for the Main Generator/Transformer trip testing to allow resetting of the turbine trip lockout so that trip functions can be verified. The link was closed before plant start-up upon completion of the test. Nuclear safety and safe plant operations were not affected. The modification has been returned to its original condition.

Modification: Temporary Modification for East Upender Air Motor

Description of Modification:

Additional air volume and pressure were provided from the service air system to drive the east upender air motor.

Safety Evaluation Summary:

The east upender air motor which drives the east carriage to and from the RB was not adversely affected by using air from the service air system since the carriage control panel contains oil and moisture separators of sufficient capacity to be acceptable. Failure of this filtration would have no adverse effect on nuclear safety since the carriage can still function without the air drier system. The modification has been returned to its original condition.