02-11-97

Reg Guide 1.16 Report
INDIANA MICHIGAN POWER/COOK NUCLEAR PLANT
Prepared for Year 1996

Number of personnel and Man-Rem By Work and Job Function

	Number of Personnel > 100 mrem			Total Man-Rem		
	Station Employees	Utility Employees	Contractors and Others	Station Employees	Utility Employees	Contractors and Others
Reactor Operation & Surveillance						
-Maintenance	1	0	0	1.732	0.069	1.723
-Operations	34	0	1	8.158	0.125	1.527
-Health Physics	27	0	4	7.968	0.001	3.227
-Supervisory	2	0	0	0.814	0.001	0.052
-Engineering	0	0	0	0.981	0.107	0.397
Routine Maintenance						
-Maintenance	77	0	211	22.620	0.002	89.046
-Operations	16	1	11	4.497	0.383	4.079
-Health Physics	28	0	39	9.303	0.000	13.266
-Supervisory	2	0	1	0.346	0.000	0.245
-Engineering	8	5	5	2.893	1.354	2.556
Inservice Inspection						
-Maintenance	2	0	14	1.462	0.039	7.455
-Operations	1	0	8	0.662	0.003	1.764
-Health Physics	0	0	0	0.050	0.000	0.074
-Supervisory	0	0	0	0.000	0.000	0.040
-Engineering	0	0	0	0.108	0.020	0.275
Special Maintenance						
-Maintenance	3	0	56	1.965	0.000	16.216
-Operations	0	0	1	0.354	0.000	0.181
-Health Physics	0	0	0	0.127	0.000	0.001
-Supervisory	0	0	0	0.000	0.000	0.062
-Engineering	0	0	0	0.219	0.035	0.048
Waste Processing						
-Maintenance	0	0	0	0.000	0.000	0.068
-Operations	0	0	0	0.000	0.000	0.010
-Health Physics	0	0	1	0.057	0.000	0.465
-Supervisory	0	0	0	0.001	0.000	0.000
-Engineering	0	0	0	0.001	0.000	0.000
Refueling						
-Maintenance	3	0	17	1.691	0.000	5.652
-Operations	7	0	21	2.538	0.000	9.387
-Health Physics	4	0	0	1.899	0.000	0.805
-Supervisory	1	0	0	0.155	0.000	0.010
-Engineering	0	0	1	0.260	0.024	0.595
Totals						
-Maintenance	101	0	283	29.470	0.110	120.160
-Operations	60	1	33	16.209	0.511	16.950
-Health Physics	40	0	48	19.404	0.001	17.837
-Supervisory	3	0	1	1.316	0.001	0.409
-Engineering	12	6	7	4.462	1.541	3.871
Grand Totals	216	7	372	70.862	2.163	159.226

3.0 STEAM GENERATOR INSPECTIONS AND REPAIRS

3.1 Unit 1 Inspection Summary

There were no unit 1 steam generator tube inspections or repairs performed during 1996.

3.2 Unit 2 Inspection Summary

There were no unit 2 steam generator tube inspections or repairs performed in 1996.

4.0 CHANGES TO PROCEDURES

This section contains a brief description of the procedure changes implemented under the provisions of 10 CFR 50.59 and the associated safety evaluations.

4.1 Operations Head Procedures

4.1.1 Procedure No. 01 OHP 4021.016.003 Revision 6, "Operation of Component Cooling System During Startup and Normal Operation".

Description of Change:

This procedure change introduces a feed and bleed process to the normal component cooling water (CCW) system operation. Per the UFSAR, the CCW surge tank is used to monitor outleakage from the CCW system and is monitored in the control room.

Safety Evaluation Summary:

The feed and bleed is being done to chemically treat the CCW against micro organisms. A totalizer will monitor the amount of feed being put in and the water that goes to the waste disposal tank. The maximum feed rate is about 100 gpm, which is also intended to be the maximum bleed rate. The feed and bleed rate will be adjusted by an operator so that the CCW surge tank level remains constant. The CCW surge tank level recorder and the low level alarms are monitored in the control room to detect any unexpected leakage. Based on leak detection out of the CCW system still being maintained by monitoring the surge tank level recorder and alarms as indicated in the UFSAR, an unreviewed safety question per 10 CFR 50.59(a)(2) does not exist.

4.1.2 Procedure No. 12 OHP SP.136, Revision 0, "Temporary Removal of Both Trains of Reserve Feed to Isolate Transformers #5 and #6 for Planned Maintenance".

Description of Change:

This procedure provides precautions and limitations and procedural guidance for the control room operators to assist St. Joseph Division personnel in aligning the 345 switchyard for planned maintenance. During this alignment there will be approximately 20-30 minutes when both trains of reserve feed will be deenergized. UFSAR chapter 8 states that "upon turbine-generator trip, the station auxiliaries are automatically and instantaneously transferred to the preferred offsite power source auxiliary transformers to assure continued power to equipment when the main generator is off the line." By taking one or both trains of reserve feed out of service, the plant is in a condition that is contrary to the assumptions in the UFSAR.

Safety Evaluation Summary:

The temporary unavailability of the preferred offsite power source places the plant in the technical specification (T/S) action statement for T/S 3.8.1.1, Electrical Power Systems - A.C. Sources. The time that the preferred offsite power source will be deenergized is within the allowable outage time provided by the plant T/S. Based on this, it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question and do not involve a change to the plant T/Ss.

4.1.3 Procedure No. 1/2 OHP 4023.ES1.3, Revision 3, "Transfer to Cold Leg Recirculation".

Description of Change:

This procedure change provides contingency actions to be taken by the operators in response to a postulated failure of a centrifugal charging pump (CCP) emergency leak off (ELO) line valve to close prior to entering the emergency core cooling system (ECCS) recirculation phase of a loss of coolant accident.

Safety Evaluation Summary:

A 10 CFR 50.59 safety evaluation of the activity indicates that the proposed activities will result in the termination of bypass flow from the containment recirculation sump as a result of the postulated failed open ELO. The actions to be taken involve the stopping of one of the two CCPs and the local manual isolation of the affected ELO. Since the postulated failure of the ELO represents the assumed single failure, the termination of one CCP will not prevent the ECCS safety function from being performed by the other train's CCP. In addition, the post-accident dose analysis of the CCP room indicates that an operator can

perform the manual valve manipulation to isolate the ELO within 24 hours. These actions will return the accident scenario to within that previously analyzed. Based on this, it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question and do not involve a change to the plant T/Ss.

4.1.4 Procedure No. 01 OHP 4021.028.014, Revision 9, "Operation of the Control Room Air Conditioning and Pressurization/Cleanup Filter System".

Description of Change:

This procedure change allows closure of the control room normal intake damper and the control room toilet room vent damper to help maintain relative humidity levels in the control room. UFSAR section 9.10.3 states that the "outdoor air supplied to the control room through the air-handling unit maintains a positive pressure within the room with respect to the surrounding environs to prevent entry of dust, etc."

Safety Evaluation Summary:

With the dampers closed, the control room would not be at positive pressure during normal operation. The normal air conditioning system includes a roughing filter and a medium efficiency filter which provide cleanup for dust and dirt that enter the control room. In the event of a radiological accident, the normal intake and toilet room vent dampers automatically close. Therefore, they would be in their correct position for accident radiological conditions. Based on this it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question.

4.2 Plant Manager Procedures

4.2.1 Procedure No. PMI-2270, Revision 23, "Fire Protection".

Description of Change:

Paragraph 4.1.3, Carbon Dioxide Suppression Systems, of Volume I, Section 4.0, "Program Description", of the fire protection program description states, in part, "Each automatic suppression system has an isolation switch that is used to prevent the local electrical actuation of the carbon dioxide system during zone occupation by plant personnel." This procedure revision permits personnel to enter areas protected by carbon dioxide systems without isolating the system. This procedure revision also includes administrative changes to update the procedure.

Safety Evaluation Summary:

The fire protection program is defined in an NRC safety evaluation report, dated July 31, 1979, which was issued in association with

license amendment nos. 31 and 12 for unit 1 and unit 2, respectively . Consistent with generic letter (GL) 86-10, section F, proposed changes to the Donald C. Cook Nuclear Plant fire protection program which do not involve additional or expanded exceptions to compliance with the administrative controls listed in appendix A to BTP APCSB 9.5-1, or impact on T/Ss, must be completed in accordance with 10 CFR 50.59. The changes to PMI-2270 involve instructions required to implement administrative controls for the fire protection program. Based on these changes which do not involve additional or expanded exceptions to compliance with the administrative controls listed in appendix A to BTP APCSB 9.5-1, or impact the T/Ss, an unreviewed safety question per 10 CFR 50.59(a)(2), does not exist.

4.2.2 Procedure No. PMP 2080 EPP.101, Revision 1, Change Sheet 1, "Emergency Classification".

Description of Change:

This procedure change added criteria for emergency condition category (ECC)-13 to prompt an "alert" declaration. The declaration will be made based on a confirmed radiation reading from a radiation monitor.

Safety Evaluation Summary:

This change was implemented to achieve compliance with 10 CFR 70.24(a)(3). The safety evaluation determined that the change does not decrease the effectiveness of the emergency plan; the change provides proper guidance in classifying an emergency and does not constitute an unreviewed safety question.

4.2.3 Procedure No. 12 PMP 6010 OSD.001, Revision 10, "Off-Site Dose Calculation Manual (ODCM)".

Description of Change:

This procedure change alters the unit vent tritium sampling frequency from continuous to weekly. The continuous air flow sampler, referenced in UFSAR section 11.3.3.1, will be formally abandoned in place. This procedure revision also included administrative changes to update the procedure.

Safety Evaluation Summary:

Comparison of weekly grab samples and the continuous air flow sampler has shown that the weekly grab samples provide effective sampling. Changing the unit vent tritium sampling from continuous to weekly will not reduce the effectiveness of the radiological environmental monitoring program. Based on this it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question.

4.3 Technical Head Procedures

4.3.1 Procedure No. 12 THP 6020 SP.228, Revision 0, "In-Line Analysis of CCW System Using COSMOS".

Description of Change:

This procedure was created to allow monitoring of CCW system chemistry using an in-line system. The new procedure is for installation and operation of a new piece of equipment, COSMOS, to monitor CCW chemistry. COSMOS is operated by tapping into the miscellaneous header of the CCW system in the nuclear sampling room through pipes that are normally capped. Valves on the CCW system are used to control the flow at about 10 gpm.

Safety Evaluation Summary:

The safety evaluation determined that the change does not involve an unreviewed safety question as defined in 10 CFR 50.59. The CCW miscellaneous header supplies cooling flow to sample coolers. There are no sample cooling CCW flow requirements during or after a loss of coolant accident, except for the post-accident sampling system. For post-accident sampling, we committed to sample lower containment air, containment fluids, and the reactor coolant system hot legs, utilizing four sample coolers. CCW flow to the sample coolers and COSMOS can be isolated to ensure adequate CCW flow to the post-accident sampling coolers.

4.4 Engineering Head Procedures

Engineering Head Procedures are listed under Tests or Experiments Not Described in the FSAR.

4.5 Maintenance Head Procedures

4.5.1 Procedure No. MHP SP.157, "Hydro of Cooling Lines to Containment Penetrations 2-CPN-3 and 4".

Description of Change:

The intent of this special procedure is to provide the necessary instructions and documentation for unplugging the cooling lines to containment penetrations 2-CPN-3 and 2-CPN-4 through the application of hydrostatic pressure. The miscellaneous train of the CCW system is to be used as a source of water for the hydrostatic pressure. A hydro pump is hooked up to various connections in the system and water is pumped into the system to dislodge the blockage. A safety valve set to 150 psig is included in the setup to ensure that the design pressure of the system is not exceeded. The hydrostatic configuration is not depicted in the UFSAR Figure 9.5-1.

Safety Evaluation Summary:

The only part of the CCW system affected by this change does not contribute to accident mitigation. The accident mitigating capability of the equipment impacted by the procedure is not diminished. Based on this, it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question.

5.0 TESTS OR EXPERIMENTS NOT DESCRIBED IN THE FSAR

This section describes procedures classified as a "Test or Experiment" implemented under the provisions of 10 CFR 50.59 and the associated safety evaluation.

5.1 Procedure No. 01 EHP 4030 STP.248, Revision 2, "CCW Flow Balance".

Description of Change:

The objective of this test procedure is to assure that the CCW system flow distribution during a phase "A" or phase "B" containment isolation provides in excess of the minimum safeguards train flow detailed in the FSAR table 9.5-2. This test procedure also verifies that miscellaneous train equipment which does not isolate on a phase "A" or phase "B" initiation are provided with at least the minimum flow listed in UFSAR table 9.5-2. Three of the CCW flows being verified by this procedure do not match the flows listed in UFSAR table 9.5.2. Specifically, the flows that do not match are the miscellaneous service train flows to the waste gas compressors, sample coolers and the reactor coolant pump motor bearing oil coolers.

Safety Evaluation Summary:

The safety review confirmed that the procedure flow rates ensured minimum required design flow rates were met. Based on this it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question.

5.2 Procedure No. 12 EHP 4030 STP.256, "Main Steam Safety Valve Setpoint Verification".

Description of Change:

This test procedure allows for testing of the main steam safety valve (MSSV) setpoints during power operation. This testing had previously been performed during mode 3 due to accuracy requirements of the Trevitest testing equipment. New testing equipment (AVK Ultrastar) has sufficient accuracy to allow testing to occur at full power. This procedure allows performance of as-found setpoint measurements, valve setpoint adjustments, and as-left measurements.

Safety Evaluation Summary:

Results of the evaluation determined that the implementation of this test will not create an unreviewed safety question. The temporary installation and operation of the Ultrastar test equipment will not induce a spurious opening of a MSSV as analyzed in the UFSAR. The MSSVs will remain available to perform their intended function of relieving secondary side pressure throughout testing.

5.3 Procedure No. 12 EHP SP.080, "CCW Flow to CEO Fan Motor Air Coolers".

Description of Change:

This procedure establishes CCW flow to the containment equalizing fans while the unit is in mode 1 operation by opening motor operated valves CCM-430, 431, 432, and 433 to measure the CCW flow.

Safety Evaluation Summary:

Performance of the test procedure will not prevent the CCW system from delivering its required cooling flow in either the normal or post-accident configuration. Based on this, it was concluded that the actions to be taken in the procedure change do not involve an unreviewed safety question.

6.0 CHALLENGES TO PRESSURIZER POWER OPERATED RELIEF VALVES AND SAFETY VALVES

During 1996, there were no challenges on either unit 1 or unit 2 to the pressurizer power operated relief valves or the pressurizer safety valves as a result of the valves being called upon to mitigate an actual overpressure condition.

7.0 REACTOR COOLANT SPECIFIC ACTIVITY

During 1996, there were no instances on either unit 1 or unit 2 in which the reactor coolant I-131 specified activity exceeded the limits of T/S 3.4.8. Compliance was verified by routine gamma spectrometry analysis of the reactor coolant per 12 THP 6020 LAB.208.

8.0 IRRADIATED FUEL EXAMINATIONS

During the 1996 unit 2 refueling outage, in-mast fuel (IMFS) sipping and ultrasonic testing (UT) was performed on irradiated fuel to identify failed fuel. Underwater video and binocular visual examinations were performed to assess fuel assembly structural integrity. Westinghouse Electric Corporation was contacted to perform these services.

After the 1996 unit 2 refueling outage, an inspection of the failed fuel found during the refueling outage and a root cause analysis was

performed to determine the cause of the fuel failures. Unintrusive and intrusive underwater video examinations were performed and Westinghouse was also contracted to assist in this investigation.

After the 1995 unit 1 refueling outage, fuel examinations were performed to determine the root cause of the occurrence of fuel failure at Cook Nuclear Plant. Westinghouse Electric Corporation was contracted to perform these services.

8.1 1996 Unit 2 Refueling Outage Fuel Inspections

8.1.1 In-Mast Fuel Sipping

IMFS was used to detect fuel failures during the 1996 unit 2 refueling outage. All 193 fuel assemblies from the cycle 10 core were inspected using IMFS.

During core offload, when a fuel assembly is raised out of the core, the reduction of water pressure due to the change of depth of water allows fission gases in failed fuel rods to expand. When the fuel assembly is raised into the manipulator crane mast to the full up position, a trickle flow of dry air is pumped through nozzles located at the bottom opening of the mast. This air rises through the mast, stripping any fission gases that may be present on the surface of the fuel rods. After this air reaches the surface of the refueling cavity, still within the mast, this offgas air is directed to a detector that measures radioactivity. Increases in radioactivity above background levels indicate the presence of at least one failed fuel rod in that fuel assembly. IMFS cannot determine which rod is failed, only that the assembly contains at least one or no failed fuel rods.

During the unit 2 1996 refueling outage, two fuel assemblies were identified as suspect.

8.1.2 Visual Examinations

During the Unit 2 core offload during 1996, all fuel assemblies were inspected per procedure number 12 SHP 4050 QC.002. In accordance with this procedure, each assembly is inspected using binoculars. During the transit of each fuel assembly to the spent fuel pool during core unload, the fuel assembly is inspected on all four sides. The examiner is looking specifically for torn or missing grid straps, missing or damaged fuel rods, excessive clad hydriding, or rod bow to gap closure. This inspection is primarily intended to detect fuel damage caused by mechanical interaction between fuel assemblies or baffle jetting, and is done each refueling. During the 1996 inspection, binocular inspection of the fuel assemblies showed structural damage to three assemblies (Y43, Y58, and W69). One fuel assembly had a piece of non-structural grid strap torn off (Y43) which lodged in and damaged another assembly (W69). Resolution of the damaged fuel assemblies included removing assembly (Y43) from the reload and performing a core

redesign. Westinghouse manufactured a replacement of approximately the same reactivity as the damaged assembly. The damaged assembly (Y58) was found to have a grid torn off when it was being reloaded. This assembly was determined acceptable to be reused in cycle 11 by Westinghouse. Assembly (W69) was not scheduled for reinsertion in cycle 11.

8.1.3 Ultrasonic Examinations

Prior to introducing IMFS technology to Cook Nuclear Plant, detection of fuel failures was primarily performed using ultrasonic testing technology. Now that IMFS technology is used, UT is now used as a confirmatory measurement, and to identify which fuel rods in the fuel assembly are failed. Typically, all irradiated fuel assemblies scheduled for reload are examined by UT. Also, any fuel assemblies found to be failed or suspect by IMFS are also examined by UT. UT is performed in the spent fuel pool after core offload and prior to core reload. The goal of the combined use of IMFS and UT technologies is to prevent the reload of leaking fuel.

UT operates by a probe transceiver sending a high frequency sound wave into a fuel pin and measuring the strength of the returning signal, or "ring back." If there is water present in the fuel rod, the amplitude of the "ring back" will be diminished in relative comparison to fuel rods that do not contain water. If a fuel rod contains water, it is extremely likely that it is a failed fuel rod. The probe transceiver is inserted horizontally into the fuel assembly at an axial location just above the bottom grid strap. The inspection continues for each fuel assembly until the probe is pushed past each fuel rod.

During 1996, UT services for the unit 2 refueling outage were contracted to Westinghouse. During the 1996 unit 2 refueling outage, 112 fuel assemblies designated for unit 2 cycle 11 and 2 assemblies scheduled for discharge (identified as suspect by IMFS) were inspected using UT technology. The results of the unit 2 UT exam are as follows:

- of the 112 fuel assemblies that were inspected by IMFS and found not to be failed, UT also found them not to be failed.

- of the two fuel assemblies identified by IMFS to be suspect, one was found to contain a failed fuel rod and the other was found to contain two suspect fuel rods.

8.2 1995 Unit 1 Refueling Outage Intrusive Failed Fuel Examinations

After the unit 1 1995 core unload, a visual inspection of the reactor lower core plate revealed the presence of a large amount of foreign material. This foreign material was later determined to be portions of flexitallic gasket material from IRV-311 which had inadvertently become entrained in the reactor coolant. Using an underwater video camera, the underside of the bottom nozzles of all fuel assemblies unloaded

from the unit 1 core were inspected. This inspection occurred in parallel with the ultrasonic testing exam. About a dozen fuel assemblies were found to have flexitallic gasket material lodged in the flow holes or otherwise attached to the fuel assembly. Most of this foreign material was retrieved from the fuel using underwater tooling. No fuel with known debris was loaded into the core. In addition, in parallel with the core reload, an additional underwater video inspection was performed on each irradiated fuel assembly of the area between the bottom nozzle and the bottom of the fuel rods for the presence of flexitallic gasket material. No foreign objects were found during this inspection.

In December 1995 and January 1996, an intrusive failed fuel inspection of the unit 1 cycle 14 failed fuel was performed at Cook Nuclear Plant. This inspection was a continuation of the failed fuel inspection of fuel assemblies that were found by UT during the refueling outage to contain failed rods or suspect rods identified by UT and located toward the center, not on the periphery, of the fuel assembly. This inspection was contracted to Westinghouse.

During the Westinghouse inspection, three failed rods and three suspect rods were inspected in three fuel assemblies. Selected fuel assemblies, one at a time, were placed in a special inspection elevator installed in the fuel transfer canal specifically for this inspection. The fuel assembly was inverted in the elevator, the bottom nozzle removed, and, one at a time, selected fuel rods were removed for inspection. Each rod was inspected using a high-magnification video camera. Non-failed fuel rods were returned to the fuel assembly skeleton to the location from which they came; failed fuel rods were placed in a special rod storage basket that is stored in a spent fuel pool rack storage cell location. In one instance, a stainless steel pin was placed in a unit 1 fuel assembly skeleton location in place of the failed rod. Upon completion of the testing plan for each fuel assembly, the bottom nozzle was reinstalled, the fuel assembly was reinverted to its upright position and returned to its spent fuel pool storage rack cell location.

The inspection revealed that all of the fuel rod failures were due to debris-fretting. None of the suspect rods in the one suspect fuel assembly were failed.

9.0 CHANGES TO FACILITY

This section contains a brief description of the changes to the facility implemented under the provisions of 10 CFR 50.59 (b)(2) and the associated safety evaluations.

9.1 Design Change Packets (DCPs)

9.1.1 Margin From Saturation (T-sat) Meter Replacement

Description of Change:

12-DCP-0001 was installed for unit 2 in 1996. It was previously installed in unit 1 in 1995. It allowed for the replacement of the "Margin From Saturation (T-sat)" meter. Foxboro "SPEC-200" micro control cards are used for the new device. The Foxboro cards are already in use for other applications at the plant. The old meter has been removed and a new LED panel meter installed in its place. Having these meters operable is consistent with a commitment made in letter AEP:NRC:0761.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based upon the fact that the design change installed equipment is at least as reliable as the equipment that was removed; the saturation meter is not safety related, the saturation monitor will assist the operators in detecting equipment malfunctions; this design change maintains the integrity of the safety related equipment that the new equipment interfaces with and in itself cannot create the possibility of an accident of a different type than any previously evaluated in the UFSAR; and will improve sub-cooling margin monitoring capability by restoring the dedicated saturation monitor to functionality.

9.1.2 Control Rod Drive Mechanism Timing Modifications

Description of Change:

12-DCP-003 was installed for unit 2 in 1996. It was previously installed in unit 1 in 1995. The unit 2, 15 rod control system logic cabinet slave cycle decoder cards and all spare slave cycle decoder cards were modified per Westinghouse technical bulletin NSD-TB-94-05-RO. This design change is related to GL 93-04, "Rod Control System Failure and Withdrawal of Rod Control Cluster Assemblies." This design change is consistent with our submitted AEP:NRC:1190B.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this design change decreases the probability of accidents, reduces the consequences of a single failure or malfunction in the rod control system, addresses concerns in GL 93-04, reduces the probability of an accident different from those previously evaluated in the safety analysis report, and the nature of the change precludes its impact on any margin of safety as defined in T/S.

9.1.3 Vehicle Barrier System at the Cook Nuclear Plant

Description of Change:

12-DCP-011 places vehicle control measures at the Cook Nuclear Plant for protection of vital areas. 10 CFR 73.55 (c)(7) "Vehicle Control Measures" requires the licensee to establish vehicle control measures, including vehicle barriers to protect against the use of land vehicles as a means of transportation to gain unauthorized proximity to vital areas.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this DCP installed a vehicle barrier system (VBS) as required by the new 10 CFR 73.55 (c)(7) to protect against use of a land vehicle as a means of transportation to gain unauthorized proximity to vital areas. No T/Ss deal with the VBS, therefore, the margins of safety are not affected.

9.1.4 Replacement of Auxiliary Building Temporary Wooden Doors Along with the Roll-up Door

Description of Change:

12-DCP-023 replaced the roll-up door and back up temporary double leaf wooden door 2-DR-AUX 383 with a permanent double leaf door. The replacement door has a three hour fire rating. The doorway is located at el. 609' at the southeast corner of the auxiliary building. As a result of a self-assessment on the auxiliary building pressure boundary, door 2-DR-AUX 383 is identified as a part of a newly defined ventilation boundary: It is required to remain closed at all times except as necessary for the movement of personnel and equipment. Due to the high volume of traffic, the roll up door at 2-DR-AUX 383 was kept open at all times. Temporary double leaf doors had been installed to maintain the pressure boundary.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this DCP replaces the existing roll-up door with a permanent double leaf door. The double leaf door has a three hour fire rating and will, therefore, maintain the required pressure boundary.

9.1.5 Abandoning the Chlorine Detectors in the Control Rooms

Description of Change:

12-DCP-051 abandons the chlorine detectors in the control room. AEP:NRC:0398C, dated February 9, 1981, committed to provide a chlorine

detection system in the control room. Subsequent to this, submittals to the NRC have documented that chlorine detectors are not necessary, and the probability of gaseous chlorine entering into the control room HVAC system is insignificant. In AEP:NRC:0398AB, dated November 1, 1995, we have formally indicated our intention to abandon this system.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this system is not considered in any accident evaluation in chapter 14, safety analysis of the UFSAR; this system has been determined to not be necessary and has been isolated; this modification does not interact with equipment important to safety, or prevent any function of equipment important to safety; and this system is not required by T/S.

9.1.6 Install a 10' x 28' Modular Building (HAZ-STOR Building)

Description of Change:

12-DCP-0058 installs a 10' x 28' modular building (HAZ-STOR building) within the paved surface directly behind the Plant Heating Boiler room. This building will be used to store and process waste products contained in the 55 gallon drums. This DCP involves a structure that lies outside the vital area, but is inside the protected area. The building is self-contained with an explosion-proof design, HVAC system, integral fire protection system, and spill containment. Electrical power connections and a concrete foundation were required.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this installation does not increase the probability of occurrence of any accident analyzed in chapter 14, safety analysis of the UFSAR, since the structure involved is unrelated to the probability of occurrance of an accident previously evaluated in the UFSAR. This structure, which is located outside of the Vital Area, cannot create any new credible accident that is different from one already evaluated in the UFSAR. This design change does not affect any of the T/Ss, and thus has no affect on the margin of safety as defined in the bases for the T/Ss.

9.1.7 CO_2 Fire Suppression System in Turbine Lube Oil Rooms

Description of Change:

12-DCP-0082 modifies the CO_2 fire suppression system in the Turbine Lube Oil rooms so that it is a manually operated system instead of an automatic system and removes the contact that causes the annunciator to trip when the system is isolated. In the past, isolating the system caused a nuisance alarm in the control room and was a frequent

distraction to the operators. The system is redundant since the rooms also have automatic sprinkler systems. An automatic water sprinkler system exists in these areas which now becomes the primary fire suppression system for these areas. The CO_2 system is the back-up system. The alarms associated with the sprinkler system indicate when a fire has occurred.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this design change has no affect on the performance of any safety system as described in chapter 14 of the UFSAR. The consequences of an accident previously evaluated in the UFSAR will not increase because there is no impact on any equipment associated with safe shut-down or equipment required to mitigate an accident. This design change does not affect the safety functions as described in the UFSAR. Therefore, the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the UFSAR will not be increased. This design change cannot create any new credible failure mode. Also, this design change does not impact the fire detection system as described in technical specifications. Therefore, the margin of safety as defined in the bases for any T/S is not reduced.

9.1.8 Replace Existing Controllers and Associated I/P Transducers

Description of Change:

12-DCP-0802 replaces the pneumatic controllers on each of the six condensate chemical feed pumps (1- and 2-PP-63E; W; and M). The existing controllers were removed and new manual micrometer type controllers were installed on each pump at the same location. Using the new controllers, chemical feed rates will be manually adjusted for each pump in lieu of the pneumatic adjustment.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that the design change modifies the condensate chemical feed pump control from manual/automatic to only manual, and no accident initiator in chapter 14 assumes malfunction of the condensate chemical feed pump. The condensate chemical feed pump is not referenced in the T/Ss, so the margins of safety as described for any T/Ss are not affected.

9.2 Minor Modifications (MMs)

9.2.1 Addition of a Vent Line to the Safety Injection (SI) Pump Suction Header

Description of Change:

12-MM-0590 was installed for unit 2 in 1996. It was previously installed in unit 1 in 1995. It allowed for the unit 2 installation of a permanent 1-inch vent pipe from the common SI pump suction header to a pre-existing drain in both units. The piping is installed off the 8-inch suction header. The vent line contains a 1-inch globe valve (the root valve) and down stream sight glass. The root valve is administratively locked closed when not in use.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that the root valve is administratively controlled and the availability of the SI system to perform its safety function is not adversely impacted by this MM. This MM does not affect any of the T/Ss, and so it has no affect on the margin of safety as defined in the basis for the T/Ss.

9.3 Plant Modifications (PMs)

9.3.1 Circulating Water Pumps (CWPs) Motor Replacement

Description of Change:

12-PM-0833 allowed for the replacement of the circulating water pump (CWP) motors, power feeds and current transformers. Seven 2750 HP motors were installed in place of the existing overloaded circulating water pump motors, along with power cables with higher ampacity ratings.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this design change was initiated to upgrade the CWP motors to current operating conditions without overloading the motors or power cables, which will increase the reliability of the system. The new CWP motors will be functionally equivalent to current motors except that they have a greater horsepower. They will be able to meet the current operating conditions without overloading. No new accidents have been identified as a result of this design change.

9.3.2 Disable Main Turbine Exhaust Hood Temperature Trip

Description of Change:

02-PM-0869 this PM has made temporary modification 2-93-016 changes permanent and replace unit 2 turbine exhaust hood temperature switches with snap-action switches. Temporary modification 2-93-016 changed the unit 2 exhaust hood high temperature trip circuit to an extreme high alarm with instructions to manually trip the turbine if the high temperature is confirmed by independent sources.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that the chapter 14 safety analysis is not affected by removing the turbine exhaust hood temperature trip function. The only turbine trip of concern in the safety analysis is the overspeed turbine trip. The overspeed turbine trip is not being changed and the change to turbine exhaust hood temperature trip function will have no impact on the overspeed turbine trip. Appropriate operator instruction to manually trip the turbine at high temperature (190°F) would be available in the control room prior to start up. The change to establish a manual turbine trip based on the turbine exhaust hood temperature monitors meets the original intent of the turbine trip without the liability of potential false trips due to faulty instruments. No new accidents have been identified as a result of this design change.

9.3.3 Installation of Safety Valve Test Stand

Description of Change:

12-PM-1392 permanently mounts a safety valve test stand on the 609' elevation of the unit 1 turbine building. The safety valve test stand is permanently secured to the floor and has a permanent power supply, as well as a source of water supplied to it. An exhaust system from the test stand is installed to vent outside the turbine building. This safety valve test stand is needed for testing ISI valves during an outage.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that no safety system equipment is affected by this PM; this PM does not have any impact on the probability or consequences of any accident or on the malfunction of any equipment analyzed or not in the UFSAR; no technical specifications are affected.

9.3.4 Refurbishing of the Hot Chemistry Laboratory

Description of Change:

12-PM-1459 refurbishes the hot chemistry laboratory which is located in the 609' elevation of the auxiliary building. The refurbishment consisted of demolishing the old lab by removing the existing furniture, lights, suspended ceiling, plaster walls, and floor tiles. New furniture, suspended ceiling, floor system, drywall, and lights have been installed. The necessary services for a laboratory such as air, water, calibration and reagent gases, electrical service have been improved or provided. An adjacent office/storage space has been converted to house gas bottles, an ultra pure water system, and other ancillary laboratory equipment.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that this design change does not adversely impact any safety related equipment or equipment important to safety. No new accidents were identified as a result of the review of this plant modification.

9.4 Temporary Modifications (TMs)

9.4.1 Install Ground on 1-RU Instrument Housing

Description of Change:

TM-1-96-12 installed a ground connection between the seismic enclosure and the instrument housing for east feed pump speed controller 1-RU-3. This is then connected to plant ground.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that the TM modifies grounding of the controller 1-RU-3 to increase the performance of the non-safety related steam generator feed pump system. Therefore, there is no increase in the occurrence or consequences of an accident previously evaluated in the UFSAR. Also, there is no increase in the probability of occurrence or consequences of a malfunction of equipment important to safety previously evaluated in the UFSAR. The proposed modification does not create any new credible failure modes. Therefore, this does not create the possibility of an accident or a malfunction of equipment important to safety of a different type other than any previously evaluated in the UFSAR. There is no reference of the controller 1-RU-3 in the technical specifications. Therefore, the margin of safety as defined in the basis for any technical specification is not reduced.

9.4.2 Install Temporary Covers Over By-pass Dampers, 1-HV-AES-2

Description of Change:

TM-1-96-18 blocked off the bypass from the unit 1 engineered safety feature ventilation system, 1-HV-AES-2, fan's charcoal absorber by installing sheet metal partitions upstream of the bypass dampers, 1-HV-AES-2D1 and 2D2. With the installation of the bypass partitions and the charcoal absorber face damper open, airflow through the charcoal absorber will be present at all times when the fan is in operation.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that placing the charcoal absorber circuit of one of the AES ventilation trains in its fail safe position with the airflow path continuously through the charcoal absorber, ensures its ability to provide its safety function during a Chapter 14 accident; no adverse seismic concerns regarding surrounding equipment were identified as the changes are within the filter housing ductwork; the AES train will continue to meet the limiting condition for operation and surveillance requirements in accordance with T/S 3/4.7.6.1.

9.4.3 Isolation of Leaking 2-URV-130 Steam Dump Valve

Description of Change:

TM-2-96-05 isolated the normally closed leaking steam dump valve 2-URV-130 by closing valve TBP-104-30 located upstream in the turbine bypass piping. 2-URV-130 is one of nine non-safety related steam dump valves in unit 2 which reduce the magnitude of steam generator transients following a turbine load rejection and provide a heat sink subsequent to a turbine trip. 2-URV-130 is located in the turbine building on the 591' elevation.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that no credit is taken for either the turbine bypass system or the steam dump valves in accidents evaluated in the UFSAR; the isolation of 2-URV-130 will only result in the potential opening of other URV's earlier than would otherwise be necessary. This TM does not create any new credible accident or malfunction different than already described in the UFSAR, and neither the operation of the turbine bypass system nor the non-safety related steam dump valves are discussed in the technical specifications.

9.4.4 Install Temporary Covers Over By-pass Dampers, 2-HV-AES-2

Description of Change:

TM-2-96-06 blocked off the bypass from the unit 2 engineered safety feature ventilation system, 2-HV-AES-2 fan's charcoal absorber by installing sheet metal partitions upstream of the bypass dampers, 2-HV-AES-2D1 & 2D2. With the installation of the bypass partitions and the charcoal absorber face damper open, airflow through the charcoal absorber will be present at all times when the fan is in operation.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that placing the charcoal absorber circuit of one of the AES ventilation trains in its fail safe position, with the airflow path continuously through the charcoal absorber, ensures its ability to provide its safety function during a Chapter 14 accident; no adverse seismic concerns regarding surrounding equipment were identified as the changes are within the filter housing ductwork; the AES train will continue to meet the limiting condition for operation and surveillance requirements in accordance with T/S 3/4.7.6.1.

9.4.5 Install Temporary Spent Fuel Pit (SFP) Demineralizer

Description of Change:

TM-12-96-07 installed a temporary demineralizer in the refueling water purification system in place of the damaged spent fuel pit (SFP) demineralizer, QC-2. The demineralizer is required for outages to maintain clarity of the refueling water in order to facilitate fuel movement and inspection. The temporary demineralizer will be located in the 15 gpm waste evaporator room and hoses are routed to connections at the refueling water purification pump. Flow to the temporary demineralizer is taken from the pump discharge at a sample connection (RSX-502) and returned to the inlet of the refueling water purification filter (QC-33) at a pressure indicator connection (RPI-503). The return hose is connected to a tee installed at this instrument connection in order to continue providing pressure indication.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that use of this temporary demineralizer in place of the damaged SFP demineralizer has no adverse impact or potential contribution to accidents previously evaluated in the UFSAR; the intended design function will be maintained; no significant potential exists to adversely impact safety related equipment; and there are no technical specification requirements associated with the refueling water purification system.

9.4.6 Alternate Miscellaneous Sealing and Cooling Water (MSCW) Supply

Description of Change:

TM-12-96-19 provides an alternate water supply from various sources to the equipment served by the MSCW system while a modification to the MSCW is performed. Temporary supplies from the nonessential service water (NESW) system are used to supply seal water to the turbine room sump pump and seal water to the unit 1 vacuum priming pumps. Temporary supplies from the Lake Township water header are used to supply sealing water to the Unit 2 vacuum priming pumps and bearing cooling water to the Unit 1 and 2 condensate booster pumps.

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that the NESW system, the MSCW system and the Lake Township water supply header are not germane to or addressed in the evaluation of any accidents postulated in the UFSAR. None of the equipment served by the MSCW system is germane to or is addressed in the evaluation of any accidents postulated in the UFSAR. The MSCW has no equipment and serves no equipment that could be considered important to safety. This modification does not change the function or design bases of any structure, system or component important to safety described in the UFSAR, no new nuclear hazard or failure mode was created, and none of the equipment impacted by this temporary modification is within the scope of the technical specifications.

9.4.7 Temporary Sodium Hypochlorite System in Screen House

Description of Change:

TM-12-96-21 involves a vendor supplied sodium hypochlorite system to inject sodium hypochlorite into the ESW, NESW and circulating water systems. The vendor supplied system entails a plastic storage tank, chemical injection pump skid, piping and tubing, and a protective curtain around the injection pump skid. The system is located in the Screen House EL 591' and chemical injection tubing is routed from the pump skid to the NESW pump suction (EL 569'), the ESW pump suction (Screen House EL 591') and circulating water (Screen House EL 591').

Safety Evaluation Summary:

This change was reviewed and determined not to constitute an unreviewed safety question. This conclusion is based on the fact that the injection of sodium hypochlorite to the ESW prevents significant build up of zebra mussels in the systems heat exchangers, which would degrade the cooling capacity of the system. This TM does not adversely modify equipment considered important to safety or interfere with the function of equipment important to safety. No new radiological hazard or

failure mode is created that can bc postulated to create an accident different than those previously analyzed in the UFSAR. The sodium hypochlorite will enhance the operation of the ESW, NESW, and circulating water systems; the concentration of chlorine will have a negligible corrosion impact on the steel piping; there are no seismic or HELB concerns associated with this TM. There is no change to the operation of the ESW equipment important to safety, nor does it impact the basis of technical specification 3/4.7.4, essential service water system.