



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I**
2100 RENAISSANCE BOULEVARD, SUITE 100
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

August 1, 2012

Mr. Michael J. Pacilio
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND STATION, UNIT 1 – NRC INTEGRATED
INSPECTION REPORT 5000289/2012003

Dear Mr. Pacilio:

On June 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Three Mile Island, Unit 1 (TMI) facility. The enclosed inspection report documents the inspection results, which were discussed on July 20, 2012, with Mr. Rick Libra, Site Vice President, and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

We appreciate your cooperation. Please contact me at 610-337-5046 if you have any questions regarding this letter.

Sincerely,

/RA/

Gordon K. Hunegs, Chief
Projects Branch 6
Division of Reactor Projects

Docket No: 50-289
License No: DPR-50

Enclosure: Inspection Report 05000289/2012003
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket No: 50-289

License No: DPR-50

Report No: 05000289/2012003

Licensee: Exelon Generation Company

Facility: Three Mile Island Station, Unit 1

Location: Middletown, PA 17057

Dates: April 1 through June 30, 2012

Inspectors: D. Werkheiser, Senior Resident Inspector
J. Heinly, Resident Inspector
C. Cahill, Senior Reactor Analyst
S. Galbreath, Reactor Engineer
T. Hedigan, Operations Engineer
D. Jackson, Chief, Operator Licensing Branch
N. Lafferty, Project Engineer
T. Moslak, Senior Health Physicist
J. Richmond, Senior Reactor Inspector

Approved by: G. Hunegs, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS.....	3
REPORT DETAILS.....	4
1. REACTOR SAFETY.....	4
1R01 Adverse Weather Protection	4
1R04 Equipment Alignment	5
1R05 Fire Protection	5
1R06 Flood Protection	6
1R11 Licensed Operator Requalification Program and Licensed Operator Performance ..	6
1R12 Maintenance Effectiveness	8
1R13 Maintenance Risk Assessments and Emergent Work Control	8
1R15 Operability Evaluations	9
1R18 Plant Modifications	10
1R19 Post Maintenance Testing	10
1R22 Surveillance Testing	11
2. RADIATION SAFETY	12
2RS3 In-Plant Airborne Radioactivity Control and Mitigation	12
2RS4 Occupational Dose Assessment	15
2RS5 Radiation Monitoring Instrumentation	19
2RS6 Radioactive Gaseous and Liquid Effluent Treatment	23
4. OTHER ACTIVITIES	24
4OA1 Performance Indicator Verification	24
4OA2 Identification and Resolution of Problems	25
4OA5 Other	26
4OA6 Meetings, Including Exit	27
SUPPLEMENTARY INFORMATION.....	A-1
KEY POINTS OF CONTACT.....	A-1
LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED.....	A-2
LIST OF DOCUMENTS REVIEWED.....	A-2
LIST OF ACRONYMS.....	A-4

SUMMARY OF FINDINGS

IR 05000289/2012003; 04/01/2012 - 06/30/2012; Three Mile Island, Unit 1, Integrated Inspection Report.

The report covered a three-month period of baseline inspection conducted by resident inspectors and announced inspections by regional specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Rev. 4, dated December 2006.

No findings were identified.

REPORT DETAILS

Summary of Plant Status

Three Mile Island, Unit 1 (TMI) began the inspection period at approximately 100 percent rated thermal power. The unit conducted a planned downpower to 35 percent power on May 26, 2012 to replace processor cards in the digital turbine control system of the main turbine. The unit was returned to 100 percent the same day and continued to operate at that power for the rest of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Readiness for Seasonal Extreme Weather Conditions – Hot Weather Preparation

a. Inspection Scope

The inspectors performed a review of Exelon's readiness for the onset of seasonal high temperatures. The review focused on the ultimate heat sink systems, ventilation systems, and the emergency diesel generators (EDGs). The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), technical specifications, control room logs, and the corrective action program to determine what temperatures or other seasonal weather could challenge these systems, and to ensure Exelon personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including Exelon's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during hot weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Summer Readiness of Offsite and Alternate Alternating Current (AC) Power Systems

a. Inspection Scope

The inspectors performed a review of plant features and procedures for the operation and continued availability of the offsite and alternate AC power system to evaluate readiness of the systems prior to seasonal high grid loading. The inspectors reviewed Exelon's procedures affecting these areas and the communications protocols between the transmission system operator and Exelon. This review focused on changes to the established program and material condition of the offsite and alternate AC power equipment. The inspectors assessed whether Exelon established and implemented appropriate procedures and protocols to monitor and maintain availability and reliability of both the offsite AC power system and the onsite alternate AC power system. The

inspectors evaluated the material condition of the associated equipment by reviewing issue reports and open work orders and walking down portions of the offsite and alternate AC power systems.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

.1 Partial System Walkdowns (71111.04Q – 3 samples)

The inspectors performed partial walkdowns of the following systems:

- 'B' control building emergency ventilation on April 16, 2012
- 'B' emergency diesel generator (EDG) during 'A' EDG maintenance outage on May 1, 2012
- 'B' EDG during unplanned 'A' EDG troubleshooting on June 7-8, 2012

The inspectors selected these systems based on their risk-significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system diagrams, the UFSAR, technical specifications, work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Exelon staff had properly identified equipment issues and entered them into the corrective action program for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Resident Inspector Quarterly Walkdowns (71111.05Q – 4 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Exelon controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire barriers were maintained in good material condition. The inspectors also verified that

station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures. Fire zones and areas inspected included:

- Control building 322' elevation remote shutdown area on April 6, 2012
- Intake screen pump house 308' elevation 1R switchgear and pump area on April 16, 2012
- Control building 338'6" elevation ESAS room on April 23, 2012
- Control building 306' elevation radiation control office and labs on April 26, 2012

b. Findings

No findings were identified.

1R06 Flood Protection (71111.06 – 2 samples)

Internal Flooding Review

a. Inspection Scope

The inspectors reviewed the UFSAR, the site flooding analysis, and plant procedures to assess susceptibilities involving internal flooding. The inspectors reviewed the corrective action program to determine if Exelon identified and corrected flooding problems and whether operator actions for coping with internal flooding were adequate. The inspectors reviewed documentation, barriers, and instrumentation for the following areas:

- (1) Intermediate building analysis for postulated main feedwater or main steam line breaks and its impact on plant equipment required for shutdown
- (2) 'A' train 4160 and 480 VAC safety-related switchgear rooms after a domestic water pipe rupture on the 348 foot level of the control tower on April 30, 2012.

In addition, the inspectors validated that the drainage systems was maintained to protect plant equipment required during a postulated internal flooding event.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance
(71111.11 – 3 samples)

.1 Quarterly Review of Licensed Operator Requalification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training for the 'E' operator crew on May 17-18, 2012. The inspectors evaluated operator performance during the simulated event and verified completion of risk significant operator actions, including the use of

abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the control room supervisor. The inspectors verified the accuracy and timeliness of the emergency classification made by the shift manager and the technical specification action statements entered by the shift technical advisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed instrumentation and control activities in the main control room related to reactor building spray Bailey control panel module and FIDMS-PPC module replacements on April 16, 2012. Also, on April 22, 2012 inspectors observed normal plant operations in the main control room. The inspectors observed test and evolution briefings, pre-shift briefings, and reactivity control briefings to verify that the briefings met the criteria specified in Exelon's OP-AA-1, "Conduct of Operations," Revision 000. Additionally, the inspectors observed licensed operator performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

.3 Annual Licensed Operator Regualification

a. Inspection Scope

On April 12, 2012, one NRC region-based inspector conducted an in-office review of results of licensee-administered annual operating tests and comprehensive written exams for 2012. The inspection assessed whether pass rates were consistent with the guidance of NRC Manual Chapter 0609, Appendix I, "Operator Regualification Human Performance Significance Determination Process (SDP)." The inspector verified that:

- Crew pass rate was greater than 80 percent. (Pass rate was 100 percent.)
- Individual pass rate on the dynamic simulator test was greater than 80 percent. (Pass rate was 95.6 percent.)
- Individual pass rate on the written exam was greater than 80 percent. (Pass rate was 97.8 percent.)
- Individual pass rate on the job performance measures of the operating exam was greater than 80 percent. (Pass rate was 100 percent.)

- More than 80 percent of the individuals passed all portions of the exam. (93.4 percent of the individuals passed all portions of the examination.)

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 3 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structures, systems, and components (SSC) performance and reliability. The inspectors reviewed system health reports, corrective action program documents, maintenance work orders, and maintenance rule basis documents to ensure that Exelon was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Exelon staff was reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that Exelon staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- 'A' emergency diesel generator unavailability hours approaching goal on May 2-3, 2012
- Intake structure rakes/screens out-of-service for de-silting operations (Issue Report [IR] 1361792) on May 7, 2012
- 'A' emergency diesel generator 10CFR50.65.(a)(1) screening (IR 1376940) on June 12, 2012

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 6 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Exelon performed the appropriate risk assessments prior to removing equipment for work. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Exelon personnel performed risk assessments as required by 10 CFR 60.65(a)(4) and that the assessments were accurate and complete. When Exelon performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the technical

specification requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Issues with breaker T1-E2 schedule delays documented in IR 1354262 on April 17, 2012
- Planned replacement of the 'C' nuclear river water pump on April 25, 2012
- Planned major maintenance outage of the 'A' EDG on April 30, 2012
- Extended Yellow station risk due to 'A' EDG bearing alignment issues on May 7, 2012
- Planned station Orange risk during diagnostic testing of decay heat suction valve DH-V-5B on May 15, 2012
- Emergent Orange station risk to test 'B' EDG for potential common cause after 'A' EDG trip on June 7, 2012

b. Findings

No findings were identified.

1R15 Operability Evaluations (71111.15 – 7 samples)

a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions:

- 'A' train 4160 volt and 480 volt switchgear during domestic water intrusion into control building when a water line break occurred on April 30, 2012
- 'B' EDG common cause failure review on May 2, 2012 for bearing issues identified during 'A' EDG system outage on May 2, 2012
- 'A' EDG room fan damper abnormalities and torn ventilation boot on May 3, 2012
- 10 CFR 21 (NRC Event Notification #47488) review of Limitorque SMB actuators (IR 1364260) on May 10, 2012
- 'B' nuclear service water pump high flow during in-service test on May 13, 2012
- Engineered safeguards actuation relay issues (IR 1366317) on May 14, 2012
- Main-steam leak downstream of MS-V-88D (IR 1370394) on May 25, 2012

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the technical specifications and UFSAR to Exelon's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Exelon. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 2 samples)

.1 Temporary Modifications

a. Inspection Scope

The inspectors reviewed the temporary modifications listed below to determine whether the modifications affected the safety functions of systems that are important to safety. The inspectors reviewed 10 CFR 50.59 documentation and post-modification testing results, and conducted field walkdowns of the modification to verify that the temporary modifications did not degrade the design bases, licensing bases, and performance capability of the affected systems.

- Engineering Change Request (ECR) 12-00222 that modified the 'A' EDG forward generator bearing end cap in a maintenance outage during the week of April 30, 2012.

.2 Permanent Modifications

a. Inspection Scope

The inspectors evaluated a modification to the reactor building seismic gap seal with respect to flood protection. This modification installed a redundant seal (SilkaSeal) per engineering change package ECR 12-00160-000, "RB Seismic Gap Flood Seal." The inspectors verified that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the upgrade and design change, including review of supporting bases and calculations. The inspectors also observed various phases of installation and walked the seal down after installation.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing (71111.19 – 8 samples)

a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure was consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- OP-TM-543-452, Local Manual Operation of DC-V-2B and 65B, after DC-V-65B actuator replacement on April 3, 2012
- 1107-11, TMI Grid Operations, for 'A' auxiliary transformer load tap changer controller replacement on April 3, 2012
- NR-P-1C replacement on April 23, 2012
- ESAS channel #1 (-) power supply (ES-01-0-5-1) replacement on April 25, 2012
- 'A' EDG maintenance outage and repairs on May 5, 2012
- ESAS block load relay replacement on May 31, 2012
- 1303-11.39A, HSPS-EFW Auto Initiation, for MS-V-13B relay replacement on June 7, 2012
- 1303-4.16, Emergency Power System, for EDG 'A' LSB relay replacement on June 9, 2012

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 7 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied technical specifications, the UFSAR, and Exelon procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- 1302-3.1D, Calibration of RM-A-2 Particulate Channel on June 17, 2012 (leak rate)
- OP-TM-211-242, MU-V-18 Stoke Test for IST on April 18, 2012 (in-service test)
- 1303-4.11, HPI/LPI Logic and Analog Channel Test on April 24, 2012
- OP-TM-212-201, IST of DH-P-1A and Valves from ES Standby Mode on May 8, 2012 (in-service test)
- MA-AA-723-300 Diagnostic Testing of Motor Operated Valves for DH-V-5B on May 15, 2012 (in-service test)
- OP-TM-424-212, IST of EF-V-30C on May 17, 2012 (in-service test)
- OP-TM-541-233, IST for NR-P-1C on June 16, 2012 (in-service test)

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2RS3 In-Plant Airborne Radioactivity Control and Mitigation (71124.03)

This area was inspected April 9 – 13, 2012, to verify in-plant airborne concentrations are being controlled consistent with as low as reasonably achievable (ALARA) principles and that respiratory protection devices are properly used and maintained. The inspectors used the requirements in 10 CFR Part 20, the guidance in Regulatory Guide 8.15 “Acceptable Programs for Respiratory Protection”, Regulatory Guide 8.25, “Air Sampling in the Workplace,” NUREG-0041, “Manual of Respiratory Protection Against Airborne Radioactive Material,” the Technical Specifications, and the licensee’s procedures required by technical specifications as criteria for determining compliance.

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the UFSAR to identify areas of the plant designed as potential airborne radiation areas and any associated ventilation systems or airborne monitoring instrumentation. This review included instruments used to identify changing airborne radiological conditions, such that actions to prevent an overexposure may be taken. The review included an overview of the respiratory protection program and a description of the types of devices used. The inspectors reviewed the UFSAR, Technical Specifications, and emergency planning documents to identify location and quantity of respiratory protection devices stored for emergency use. Inspectors reviewed the licensee’s procedures for maintenance, inspection, and use of respiratory protection equipment including self-contained breathing apparatus, as well as procedures for air quality maintenance.

The inspectors reviewed reported performance indicators to identify any related to unintended dose resulting from personnel intakes of radioactive material.

b. Findings

No findings were identified.

.2 Engineering Controls

a. Inspection Scope

The inspectors reviewed the licensee’s use of permanent and temporary ventilation to determine whether the licensee uses ventilation systems as part of its engineering controls to control airborne radioactivity. The inspectors reviewed procedural guidance for use of installed plant systems to reduce dose and assessed whether the systems are used, to the extent practicable, during high-risk activities.

The inspectors selected the control room emergency filtering system, (an installed ventilation system used to mitigate the potential for airborne radioactivity), and evaluated whether the ventilation system operating parameters were consistent with maintaining

concentrations of airborne radioactivity in the control room below the concentrations of an airborne area to the extent practicable. The inspectors reviewed related surveillance procedures, high efficiency particulate absolute/charcoal filter test data, and test flow measurements to determine if operability criteria were met. The inspectors walked down this system to assess material condition and its present operating configuration. The inspectors determined that the system alert and high alarm set points for the associated radiation monitor, RM-A-1, were properly established. The inspectors had a control room operator describe the actions to be taken should RM-A-1 alarm.

The inspectors reviewed airborne monitoring protocols by selecting four installed systems used to monitor and warn of changing airborne concentrations in the auxiliary building. The inspectors observed a technician perform operability checks on these monitors which included two airborne monitoring system (AMS)-3 monitors located near the seal injection room and by the miscellaneous waste evaporator, and two AMS-4 monitors located in the chemical addition room and in the radio-chemistry laboratory.

Through review of relevant procedures and discussions with the cognizant licensee representative, the inspectors assessed the licensee's alpha monitoring and control program. The inspectors evaluated the plant areas where alpha contamination was identified, the threshold criteria for alpha contamination levels for implementing various radiological controls, and the action levels for alpha-emitting airborne radio-nuclides requiring bioassay evaluations.

b. Findings

No findings were identified.

.2 Use of Respiratory Protection Devices

a. Inspection Scope

The inspectors reviewed records of air testing for refilling self-contained breathing apparatus (SCBA) bottles to determine that the air used in these devices meets or exceeds Grade D quality.

The inspectors selected five individuals qualified to use respiratory protection devices, and assessed whether they were deemed qualified to use the devices by successfully passing an annual medical examination, respirator fit-test and relevant respiratory protection training. In addition, the inspectors observed two individuals being fit tested for using respirators. The inspectors confirmed that the tested individuals were medically qualified and completed the requisite training.

The inspectors selected five individuals assigned to wear a respiratory protection device and observed them donning, doffing, and functionally checking the device as appropriate. Through observations of these individuals, the inspectors observed the individuals removing and replacing the air bottle and properly responding to a device malfunction or unusual occurrence. The inspectors also reviewed training lesson plans for using these respiratory protection devices.

b. Findings

No findings were identified.

.3 Self-Contained Breathing Apparatus (SCBA) for Emergency Use

a. Inspection Scope

The inspectors reviewed the status and surveillance records of selected SCBAs staged in-plant for use during emergencies. The inspectors reviewed the licensee's capability for refilling and transporting SCBA air bottles to and from the control room and operations support center during emergency conditions.

The inspectors chose five SCBAs staged that are ready for use in the plant. The inspectors observed a technician perform monthly operational inspections of these SCBAs. The inspectors assessed the physical condition of the device components and reviewed records of equipment inspection, maintenance, and testing on the vital components. The inspectors verified that personnel assigned to repair SCBA components have received vendor-provided training and were certified by the manufacturer.

The inspectors selected five individuals on control room shift crews and from designated departments currently assigned emergency duties to assess whether control room operators and other emergency response and radiation protection personnel were trained and qualified in the use of SCBAs. The inspectors determined that personnel assigned to refill bottles were trained and qualified for that task.

The inspectors determined whether appropriate mask sizes and types are available for use. The inspectors determined whether on-shift operators had no facial hair that would interfere with the sealing of the mask to the face and whether vision correction mask inserts were readily available.

The inspectors reviewed the maintenance records for five SCBA units to determine that maintenance and repairs on these unit's were performed by an individual, certified by the manufacturer of the device to perform the work. For those SCBAs that were ready for use, the inspectors verified the required, periodic air cylinder hydrostatic testing was documented and up to date.

b. Findings

No findings were identified.

.4 Problem Identification and Resolution

a. Inspection Scope

The inspectors evaluated whether problems associated with the control and mitigation of in-plant airborne radioactivity were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee corrective action program. The inspectors assessed whether the corrective actions were appropriate for a selected sample of problems involving airborne radioactivity and were appropriately documented by the licensee.

b. Findings

No findings were identified.

2RS4 Occupational Dose Assessment (71124.04)

This area was inspected April 9 – 13, 2012 to ensure occupational dose is appropriately monitored and assessed. The inspectors used the requirements in 10 CFR Part 20, the guidance in Regulatory Guide 8.13, "Instructions Concerning Prenatal Radiation Exposures," Regulatory Guide 8.36, "Radiation Dose to Embryo Fetus," Regulatory Guide 8.40, "Methods for Measuring Effective Dose Equivalent from External Exposure," Technical Specifications, and the licensee's procedures required by technical specifications as criteria for determining compliance.

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the results of the TMI radiation protection program audits and focus area self-assessments related to internal and external dosimetry. The inspectors reviewed the most recent Nuclear Utility Procurement Issues Committee (NUPIC) audit of the licensee's dosimetry provider/processor to determine the status of the vendor's National Voluntary Laboratory Accreditation Program (NVLAP).

A review was conducted of licensee procedures associated with dosimetry operations, including issuance/use of external dosimetry, assessment of internal dose, and evaluation of and dose assessment for radiological incidents.

The inspectors evaluated the licensee's procedural requirements for determining when external dosimetry and internal dose assessments are required.

b. Findings

No findings were identified.

.2 External Dosimetry

a. Inspection Scope

The inspectors determined that the licensee's dosimetry vendor was NVLAP accredited and that the approved irradiation test categories for each type of personnel dosimeter used are consistent with the types and energies of the radiation present and the way the dosimeter is being used.

The inspectors evaluated the onsite storage of dosimeters before issuance, during use, and before processing/reading. The inspectors also reviewed the guidance provided to radiation workers with respect to care and storage of dosimeters.

The inspectors assessed the use of electronic personal dosimeters to determine if the licensee uses a "correction factor" to address the response of the electronic personal dosimeter as compared to the dosimeter of legal record for situations when the

electronic personal dosimeter is used to assign dose and whether the correction factor is based on sound technical principles.

b. Findings

No findings were identified.

.3 Internal Dosimetry

Routine Bioassay (In Vivo)

a. Inspection Scope

The inspectors reviewed procedures used to assess the dose from internally deposited radionuclides using whole body counting equipment (FastScan). The inspectors evaluated whether the procedures addressed methods for differentiating between internal and external contamination, the release of contaminated individuals, determining the route of intake and the assignment of dose.

The inspectors reviewed the whole body count process to determine if the frequency of measurements was consistent with the biological half-life of the radionuclides available for intake.

The inspectors reviewed the licensee's evaluation for use of its portal radiation monitors as a passive monitoring system. The inspectors determined that the instrument minimum detectable activities were adequate to determine the potential for internally deposited radionuclides to prompt a further investigation.

The inspectors selected five routine whole body counts and evaluated whether the counting system used had sufficient counting time/low background to ensure appropriate sensitivity for the radionuclides of interest. The inspectors reviewed the instrument's calibration records and radionuclide library used for the count system to determine that it included the gamma-emitting radionuclides that exist at the site. The inspectors evaluated how the licensee accounts for hard-to-detect radionuclides in their internal dose assessments.

a. Findings

No findings were identified.

Special Bioassay (In Vitro)

a. Inspection Scope

There were no routine internal dose assessments obtained using whole body count results for the inspectors to review. The inspectors reviewed and assessed the adequacy of the licensee's program for urinalysis and fecal analysis of radionuclides including collection and storage of samples.

b. Findings

No findings were identified.

Internal Dose Assessment – Airborne Monitoring

a. Inspection Scope

The inspectors reviewed the licensee's program for dose assessment based on airborne monitoring and calculations of derived air concentration calculations. The inspectors reviewed in detail, the dose assessments for inhalation of tritiated water vapor while performing tasks near the spent fuel pool. The inspectors determined that sampler flow rates and collection times for air sampling equipment were adequate to allow appropriate lower limits of detection to be obtained. The inspectors also reviewed the adequacy of procedural guidance to assess internal dose from inhalation of tritium.

b. Findings

No findings were identified.

Internal Dose Assessment – Whole Body Count Analyses

a. Inspection Scope

The licensee had no incidents requiring internal dose assessments using whole body count results during the period reviewed.

b. Findings

No findings were identified.

.4 Special Dosimetric Situations

Declared Pregnant Workers

a. Inspection Scope

The inspectors assessed how the licensee informs workers of the risks of radiation exposure to the embryo/fetus, the regulatory aspects of declaring a pregnancy, and the specific process to be used for monitoring and controlling exposure to a declared pregnant worker. The licensee had no declared pregnant workers during this inspection period.

b. Findings

No findings were identified.

Dosimeter Placement and Assessment of Effective Dose Equivalent for External Exposures

a. Inspection Scope

The inspectors reviewed the licensee's methodology for monitoring external dose in non-uniform radiation fields or where large dose gradients exist. The inspectors evaluated the licensee's criteria for determining when alternate monitoring, such as use of multi-badging, is to be implemented.

The inspectors reviewed selected dose assessments performed using multi-badging to evaluate whether the assessments were performed consistent with licensee procedures and dosimetric standards.

b. Findings

No findings were identified.

Shallow Dose Equivalent

a. Inspection Scope

The inspectors reviewed the procedures for calculating shallow dose equivalent adequacy. The inspectors evaluated the licensee's method for calculating shallow dose equivalent from distributed skin contamination and for discrete radioactive particles.

b. Findings

No findings were identified.

Neutron Dose Assessment

a. Inspection Scope

The inspectors evaluated the licensee's neutron dosimetry program, including dosimeter types and radiation survey instrumentation.

The inspectors reviewed neutron exposure occurrences for a reactor building entry made on April 11, 2012 and (a) assessed the adequacy of the personnel dosimetry and instrumentation used, (b) reviewed the workers' dose and area neutron dose rate measurements on the 279' and 308' reactor building elevations, and (c) verified that neutron detection instruments were properly calibrated. The inspectors also assessed whether gamma radiation had been accounted for.

b. Findings

No findings were identified.

Assigning Dose of Record

a. Inspection Scope

For the special dosimetric situations reviewed in this section, the inspectors assessed how the licensee assigns dose of record for total effective dose equivalent, shallow dose equivalent, and lens dose equivalent. This included an assessment of external and internal monitoring results, supplementary information on individual exposures, and radiation surveys when dose assignment was based on these techniques.

b. Findings

No findings were identified.

Problem Identification and Resolution

a. Inspection Scope

The inspectors assessed whether problems associated with occupational dose assessment are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee corrective action program. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving occupational dose assessment.

b. Findings

No findings were identified.

2RS5 Radiation Monitoring Instrumentation (71124.05 – 1 sample)

This area was inspected during June 18-22, 2012, to verify the licensee is assuring the accuracy and operability of radiation monitoring instruments that are used to protect occupational workers and to protect the public from nuclear power plant operations. The inspectors used the requirements in 10 CFR Part 20, 10 CFR Part 50, Appendix A – Criterion 60 Control of Release of Radioactivity to the Environment and Criterion 64 Monitoring Radioactive Releases, 10 CFR 50, Appendix I, Numerical Guides for Design Objectives and Limiting Conditions for Operation to meet the Criterion “As Low As is Reasonably Achievable for Radioactive Material in “Light-Water – Cooled Nuclear Power Reactor Effluents, 40 CFR Part 190, Environmental Radiation Protection Standards for Nuclear Power Operations, NUREG 0737, Clarification of Three Mile Island Corrective Action Requirements, the Technical Specifications/Offsite Dose Calculation Manual, applicable industry standards, and the licensee’s procedures required by technical specifications as criteria for determining compliance.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the UFSAR) to identify radiation instruments associated with monitoring area radiation, airborne radioactivity, process streams, effluents, materials/articles, and workers. Additionally, the inspectors reviewed the associated Technical Specification requirements for post-accident monitoring instrumentation. The inspectors reviewed a listing of in-service survey instrumentation including air samplers and small article monitors, along with radiation monitoring instruments used to detect and analyze workers’ external contamination, as well as, external dose. Additionally, the inspectors reviewed personnel contamination monitors and portal monitors including whole-body counters to detect workers’ surface and internal contamination. The inspectors assessed whether an adequate number and type of instruments were available to support operations. The inspectors reviewed a licensee self-assessment report and a system health report of the radiation monitoring program to determine status of instrument operability and maintenance issues.

The inspectors reviewed procedures that govern instrument source checks and calibrations, focusing on instruments used for monitoring transient high radiological conditions. The inspectors reviewed the calibration and source check procedures for

b. Findings

No findings were identified.

.2 Walkdowns and Observations (02.02)

.a Inspection Scope

The inspectors walked down the condenser off gas effluent monitoring system, RM-A-5G and RM-A-15G. Focus was placed on flow measurement devices, sampling techniques, and instrument alignment. The inspectors determined that the condenser off gas monitor configuration aligned with what is described in the UFSAR and ODCM.

The inspectors selected six portable survey instruments in use or available for issuance and assessed calibration and source check stickers for currency, as well as, instrument material condition and operability. Instruments inspected included an RO-20, Telepole, ASP-2E, Bicron-50E, E-140N, and RM-25.

The inspectors observed licensee staff perform source checks for the different types of portable survey instruments (stated above). The inspectors assessed whether high-range instruments are source checked on all appropriate scales.

The inspectors walked down five area radiation monitors and five continuous air monitors, located in the Auxiliary Building, to determine whether they are appropriately positioned relative to the radiation sources or areas they were intended to monitor. The inspectors observed the source checks on selected continuous air monitors (AMS-3 and AMS-4) located in this area.

The inspectors selected personnel contamination monitors (PM-7, PCM-1B), portal monitors (ARGOS-5AB), and two small article monitors (SAM-11) and observed the daily source checks to determine if the instruments were operable and if the source checks were performed in accordance with the manufacturer's recommendations and licensee procedures.

.b Findings

No findings were identified.

.3 Calibration and Testing Program (02.03)

Process and Effluent Monitors

a. Inspection Scope

The inspectors selected the condenser off gas effluent monitors (RM-A-5G and RM-A-15G) and evaluated whether channel calibration and functional tests were performed consistent with Technical Specifications/ODCM. The inspectors determined that the licensee calibrated its monitors with National Institute of Standards and

Technology (NIST) traceable sources and the calibrations adequately represented the plant nuclide mix. The inspectors assessed whether the effluent monitor alarm set points were established as provided in the ODCM and station procedures.

b. Findings

No findings were identified.

Laboratory Instrumentation

a. Inspection Scope

The inspectors assessed laboratory analytical instruments used for radiological analyses to determine whether daily performance checks and calibration data indicate that the frequency of the calibrations is adequate and there were no indications of degraded performance. Instruments inspected included the gamma spectroscopy systems (detectors nos. 1, 2, 3, 4), beta scintillation counters (nos 2900, 3100), alpha contamination counter (SAC-4), and beta/gamma contamination counters (Ludlum 2000).

The inspectors assessed whether appropriate corrective actions were implemented in response to indications of degraded performance for gamma detector No. 4. The inspectors also confirmed that the radioisotopic library for the gamma spectroscopy system contained the isotopes found in the plant source term.

b. Findings

No findings were identified.

Whole Body Counter

a. Inspection Scope

The inspectors reviewed the methods and sources used to perform functional checks on the whole body counter before use and assessed whether check sources were appropriate and align with the plant's isotopic mix.

The inspectors reviewed calibration records for the whole body counter and determined that calibration sources were representative of the plant radionuclide mix and that the appropriate calibration phantom was used. The inspectors looked for anomalous results or other indications of instrument performance problems.

b. Findings

No findings were identified.

Post-Accident Monitoring Instrumentation

a. Inspection Scope

Inspectors reviewed the calibration documentation for the containment high-range monitors (RM-G-22 and RM-G-23).

The inspectors determined that an electronic calibration was completed for all range decades and was calibrated using an appropriate radiation source.

The inspectors assessed whether calibration acceptance criteria were reasonable, considering the large measuring range and the intended use of the instrument.

The inspectors reviewed sampling procedures regarding the licensee's ability to collect high-range, post-accident samples from the reactor coolant system and from the reactor building atmosphere.

b. Findings

No findings were identified.

Portal Monitors, Personnel Contamination Monitors, and Small Article Monitors

a. Inspection Scope

The inspectors selected various contamination monitors, including a PM-7, PCM-1B, ARGOS-5AB, and a SAM-11, and verified that the alarm set points were reasonable to ensure that contaminated material/equipment, or contaminated workers were not released from the site.

The inspectors reviewed the calibration documentation for each selected instrument and reviewed the calibration methods to determine consistency with the manufacturer's recommendations.

b. Findings

No findings were identified.

Portable Survey Instruments, Area Radiation Monitors, Electronic Dosimetry, and Air Samplers/Continuous Air Monitors

a. Inspection Scope

The inspectors reviewed calibration documentation for each type of portable instrument, in use. Instrument calibration records reviewed included Seimen electronic dosimeters, a neutron survey instrument (ASP-2E), Bicorn RSO-50E, RO-20, E-140N, and RM-25. For these survey instruments, the inspectors reviewed calibration methods, and reviewed the use of an instrument calibrator to perform daily source checks.

b. Findings

No findings were identified.
Instrument Calibrator

a. Inspection Scope

The inspectors reviewed the current radiation output values for the licensee's portable survey instrument calibrator units. The inspectors determined that the licensee periodically characterizes calibrator output over the appropriate range of the instrument.

The inspectors assessed whether the measuring devices had been calibrated by a facility using NIST traceable sources and whether decay corrective factors for these measuring devices were properly applied by the licensee in its source characterization.

b. Findings

No findings were identified.

Calibration and Check Sources

a. Inspection Scope

The inspectors reviewed the licensee's source term or waste stream characterization per 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to assess whether calibration sources used were representative of the types and energies of radiation encountered in the plant.

b. Findings

No findings were identified.

.3 Problem Identification and Resolution (02.04)a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring instrumentation were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee corrective action program. Included in this review were the radiation protection department self-assessment report for the instrumentation program and the engineering department system 661 quarterly health report. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring instrumentation.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)a. Inspection Scope

During the period June 18 – 22, 2012, the inspectors conducted the following activities to verify the licensee was properly maintaining and operating the gaseous effluent processing systems to ensure that radiological releases were properly mitigated, monitored, and evaluated with respect to public exposure. Implementation of these controls was reviewed against the criteria contained in 10 CFR Parts 20 and 50, the licensee's ODCM, and the licensee's procedures.

b. Walkdowns, Observations, and Findings

No findings were identified.

The inspectors examined portions of the condenser off-gas monitoring system (RM-G-5 and RM-G-15), to evaluate equipment material condition and system configuration. The inspectors also reviewed the completed calibration and surveillance test (ST) procedures, associated with these monitors that demonstrated instrument operability.

The inspectors reviewed the completed calibration and surveillance records for pressure and flow instruments, located in the sampling stream, to assure that the indicators were accurate. The inspectors determined that the radiation monitors were properly calibrated, tested, and the alert and high alarm set points were in conformance with the ODCM.

The inspectors reviewed the associated sampling procedure and observed a chemistry technician obtain and analyze tritium, particulate, iodine, and noble gas samples taken from RM-G-5. The inspectors determined that the technician adhered to the sampling procedure, properly prepared the samples for analysis, and accurately interpreted the analytical results. Additionally, the inspectors confirmed that the gamma spectroscopy system, used for counting the particulate, iodine and noble gas sample; and the scintillation counter, used for counting the tritium sample, were properly calibrated and were operating within their performance parameters.

The inspectors reviewed the most current System Health reports for other process radiation monitoring systems and discussed the system status with the cognizant system engineer.

4. **OTHER ACTIVITIES [OA]**

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System (RCS) Specific Activity and RCS Leak Rate (2 samples)

a. Inspection Scope

The inspectors reviewed Exelon's submittal for the RCS specific activity and RCS leak rate performance indicator for the period July, 2011 through April, 2012. To determine the accuracy of the performance indicator data reported for this period, the inspectors used definition and guidance contained in NEI document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6. The inspectors also reviewed RCS sample analysis and control room logs of daily measurements for RCS leakage, and compared that information to the data reported by the performance

indicator. Additionally, the inspectors observed activities that determined the RCS identified leakage rate.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems (71152 – 1 annual sample)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Exelon entered issues into the corrective action program at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the corrective action program and periodically attended issue report screening meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, to identify trends that might indicate the existence of more significant safety issues, as required by NRC Inspection Procedure 71152, Identification and Resolution of Problems. The inspectors included in this review repetitive or closely-related issues that may have been documented by Exelon outside of the corrective action program, such as trend reports, performance indicators, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or corrective action program backlogs. The inspectors also reviewed the Exelon corrective action program database for January through June 2012, to assess issue reports written in various subject areas (equipment problems, human performance issues, etc.) as well as individual issues identified during the NRCs daily IR review (Section 4OA2.1).

b. Findings

No findings were identified.

The inspectors determined that, corrective actions to address configuration control performance deficiencies from the first half of 2010 and transient material control deficiencies from 2010 continued to be effective. The number and potential safety significance of configuration control related deficiencies identified in the first half of 2011 were notably reduced from the first half of 2010. Station personnel performed extent-of-condition reviews associated with adequacy of preventive maintenance (PM) for critical

station components. This review identified several additional PMs to be developed and scheduled to support continued reliable equipment performance.

The inspectors evaluated a sample of departments that provide input into the aggregate trend review, which included maintenance, work planning, and operation departments. This review included a sample of issues and events that occurred over the course of the past two quarters to objectively determine whether issues were appropriately considered or ruled as emerging or adverse trends, and in some cases, verified the appropriate disposition of resolved trends. The inspectors verified that these issues were addressed within the scope of the corrective action program, or through department review and documentation in the aggregate trend review had had appropriate action requests in a timely manner.

The inspectors noted the Exelon has identified areas requiring further evaluation based on their aggregate review. Areas include work practices, procedure use and adherence, documentation adequacy, procedure change process, and planning, scheduling, coordination of work. The licensee has captured this in their CAP under IRs 1390952, 1389753, and 1388467. Exelon has observed and identified challenges regarding the identification of risk adverse work coordination after the work planning process has completed, consistent with the inspector's observations, and has implemented interim changes in the first half of 2012 and have additional actions planned to correct this. The inspectors have observed improved work planning and coordination, but on a limited scope.

4OA5 Other

.1 (Closed) Unresolved Item (URI) 05000289/2011005-04, Adequacy of Flood Protection without Consideration of Wind Generated Wave Activity

a. Inspection Scope

This URI was opened pending further NRC review of Exelon's licensing basis in order to determine whether a performance deficiency existed regarding the adequacy of the TMI flood barrier system to protect the site from the probable maximum flood (PMF) with attendant wind generated wave activity.

The inspectors reviewed Exelon's evaluation of this issue, and independently reviewed and assessed the TMI Final Safety Analysis Report (FSAR), Updated FSAR (UFSAR), NRC Safety Evaluation Report (SER) for TMI, and the TMI "Flood Control" emergency procedure.

UFSAR Section 2.6, "Hydrology," revision 20 (current revision), stated that a system of dikes protected the site against inundation and wave action for the site design flood of 1,100,000 cubic feet per second (cfs) river flow. It further stated that the licensee committed to provide component protection to the degree which would assure a safe and orderly shutdown for the level of flooding postulated by a PMF of 1,625,000 cfs. SER Section 2.4.7, "Technical Specifications and Emergency Operation Requirements," stated that the plant would be placed in an emergency shutdown and cooldown condition for floods greater than the site design flood (i.e., 1,100,000 cfs). It further stated that plant components would be water proofed to allow safe and uninterrupted emergency shutdown.

The inspectors compared approved plant procedures and plant flood protection configurations to the licensing and design basis descriptions in the current revision of the TMI UFSAR, the 1973 FSAR, and the 1973 NRC SER, to determine whether Exelon was specifically required to consider wind generated wave activity (i.e., dynamic water level) in addition to the PMF static water level. Documents reviewed are listed in the attachment to this report.

b. Findings and Observations

No findings were identified.

The inspectors did not identify any regulatory requirements or licensee commitments that obligated Exelon to consider wind generated wave activity in addition to the static water level associated with a PMF event. As a result, no performance deficiency was identified. This URI is closed.

The NRC Request for Information 10 CFR 50.54(f) Letter, issued March 12, 2012, regarding insights from the Fukushima accident, required Exelon to perform an external flood hazard reevaluation for TMI using present-day regulatory guidance and methodologies. In addition, it also requested that Exelon submit an interim action plan for actions taken or planned to address gaps where the reevaluation exceeds the current design basis. The due date for the reevaluation was specified as March 12, 2012 (ADAMS Accession No. ML12097A509). The inspectors noted that NRC Regulatory Guide 1.59, "Design Basis Floods," Regulatory Position 2.b specifies that safety-related components are designed to withstand flood conditions, including attendant wind generated wave activity.

4OA6 Meetings, Including Exit

2011 Annual Assessment Discussion

On April, 12, 2012, Gordon Hunegs, NRC Branch Chief for Three Mile Island, discussed Three Mile Island performance for 2011 with Mr. Mark Newcomer, Plant Manager, prior to the public annual assessment meeting.

Quarterly Inspection Report Exit

On July 20, 2012, the inspectors presented the inspection results to Mr. Rick Libra, Site VP, Three Mile Island and other members of the Three Mile Island staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

Enclosure

SUPPLEMENTARY INFORMATION
KEY POINTS OF CONTACT

Licensee Personnel

T. Alvey	Operations Support
D. Atherholt	Manager, Regulatory Assurance
P. Bennett	Manager, Design Engineering - Mechanical
J. Bomgardner	Senior Chemist
R. Brady	Shift Manager
F. Brown	Control Room Supervisor
M. Brysan	Nuclear Oversight Auditor
R. Campbell	Work Management Manager
W. Carsky	Director, Site Engineering
D. Divittore	Manager, Site Radiation Protection
S. Englert	I&C Technician
M. Fitzwater	Senior Regulatory Assurance Engineer
T. Flemming	System Engineer
J. Flora	Senior RP Technical Specialist
J. Grove	Senior Regulatory Specialist
T. Haaf	Director, Site Operations
T. Hanlon	Senior Chemist
M. Harrison	System Engineering Supervisor
K. Heisey	Engineer
J. Hogan	Senior Radiation Protection Technician
G. Jardel	Training Manager
J. Karkoska	Manager, Site Security
G. Kulp	Rad Tech Support - Nuclear
J. Levengood	Auxiliary Operator
R. Libra	Site Vice President
R. Masoero	System Engineer-Inservice Testing Program Owner
S. Mayhue	Senior Radiation Protection Technician
G. McCarty	Manager, RP Technical Support
R. McDonald	RP Manager Tech Support
W. McSorley	Flood Protection Engineer
J. Morrissey	I&C Supervisor
R. Myers	Fire Marshall
T. Orth	Manager, Chemistry
J. Piazza	Senior Manager, Design Engineering
J. Pickett	System Engineer
J. Popielarski	Work Management Director
B. Price	Shift Manager
K. Proctor	I&C Supervisor
T. Roberts	Manager, Radiological Engineering
J. Schneider	Senior Radiation Protection Technician
E. Scmeichel	Acting NOS Manager
C. Six	Operations Superintendent
J. Stubbs	Work Control Supervisor
M. Sweigart	Radwaste Supervisor
S. Taylor	Fire Protection Engineer
D. Trostle	NOS Auditor

P. Wagner	Supervisor, Electrical Maintenance
D. Williams	Control Room Supervisor
B. Young	Manager, Instrumentation and Control Department
A. Zemaitis	System Engineer

Other

D. Dyckman	Nuclear Safety Specialist, Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection
D. Jackson	Chief, Operator Licensing Branch, Nuclear Regulatory Commission, Region 1

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Closed

05000289/2011005-04	URI	Adequacy of Flood Protection without Consideration of Wind Generated Wave Activity (Section 4OA5.1)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather

Procedures

1104-24M, Diesel Generator H and V, Rev. 20
 1107-11, TMI Grid Operations, Rev. 26
 OP-AA-108-107, Switchyard Control, Rev. 2
 OP-AA-108-107-1001, Station Response to Grid Capacity Conditions, Rev. 4
 Summer Readiness Database, 2011 / TMI, dated May 14, 2012

Other

IRs

Section 4OA5 - Identification and Resolution of Problems

Procedures

TMI Emergency Procedure #1202032, "Flood Control," dated 6/22/73 (ADAMS Accession No. 7911090510)

Miscellaneous

FSAR, Section 2.6, Hydrology, Amendment 36, dated 2/09/73
 IR 01268247
 NRC Event Notification 47294, TMI New River Hydraulic Analysis Raises Maximum Flood Level, dated 9/26/11
 NRC Information Notice 2007-01, Recent Operating Experience Concerning Hydrostatic Barriers, dated 1/31/07
 NRC Memorandum, TMI Emergency Procedure #1202032, "Flood Control," dated 10/25/73 (ADAMS Accession No. 7910171012)
 NRC Regulatory Guide (RG) 1.59, Design Basis Floods, Rev. 2
 NRC RG 1.102, Flood Protection, Rev. 1

NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendations
2.1,2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima
Dai-Ichi Accident, dated 3/12/12 (ADAMS Accession No. ML12053A340)
NRC Prioritization of Response Due Dates for Request for Information Pursuant To 10 CFR
50.54(f) Regarding Flooding Hazard Reevaluations, dated 5/11/12 (ADAMS Accession
No. ML12097A509)
NRC Safety Evaluation Report (SER) for TMI Unit 1, dated 7/11/73
NUREG-0800 Section 2.4.10, Standard Review Plan - Flooding Protection Requirements, Rev.
3
SDBD-T1-122, Flood Protection Systems Design Basis Document, Rev. 0
TMI Applicant Testimony Related to Flood Protection before the Atomic Safety and Licensing
Board, dated 10/25/73 (ADAMS Accession No. 7910100570)
UFSAR Section 2.6, Hydrology, Rev. 20, dated 4/10

LIST OF ACRONYMS

AC	Alternating Current
ADAMS	Agencywide Documents and Management System
ALARA	As Low As Reasonably Achievable
AMS	Airborne Monitoring System
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
DRP	Division of Reactor Projects
ECR	Engineering Change Request
EDG	Emergency Diesel Generator
FSAR	Final Safety Analysis Report
IR	Issue Report
IST	Inservice Testing
NCV	Non-cited Violation
NIST	National Institute of Standards and Technology
NRC	Nuclear Regulatory Commission
NVLAP	National Voluntary Laboratory Accreditation Program
NUPIC	Nuclear Utility Procurement Issues Committee
ODCM	Offsite Dose Calculation Manual
PADEP	Pennsylvania Department of Environmental Protection
PARS	Publicly Available Records
PCM	Personnel Contamination Monitor
PMF	Probable Maximum Flood
RCS	Reactor Coolant System
SAC	Scintillation Alpha Counter
SAM	Small Article Monitor
SCBA	Self Contained Breathing Apparatus
SDP	Significance Determination Process
SER	[NRC] Safety Evaluation Report
SSC	Structures, Systems and Components
ST	Surveillance Test
TMI	Three Mile Island, Unit 1
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
URI	[NRC] Unresolved Item