

FOR INFORMATION ONLY

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TMI - Unit 1
Emergency Procedure

Number

EPIP-TMI-.07

title

Revision No.

Activation of the RAC

11

Applicability/Scope

USAGE LEVEL

Effective Date

All TMI RAC Emergency Response Personnel

2

DEC 8 2000

This document is within QA plan scope

Yes

No

Safety Reviews Required

Yes

No

List of Effective Pages

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	Signature	Date
Procedure Owner	/s/ J. L. Whitehead	12/05/00
Approver	/s/ N. Brown	12/05/00

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1.0 **PURPOSE**

The purpose of this procedure is to provide guidelines for the Radiological Assessment Coordinator (RAC) to activate the radiological assessment function.

2.0 **APPLICABILITY/SCOPE**

This procedure is applicable to the TMI Radiological Assessment Coordinator and Radiological Support Personnel.

3.0 **DEFINITIONS**

None

4.0 **RESPONSIBILITIES**

- 4.1 The on-shift RAC is responsible for implementing Exhibit 1.
- 4.2 The Initial Response Emergency Organization (IREO) (RAC) is responsible for implementing Exhibit 2.
- 4.3 Radiological Support Personnel are responsible for implementing Exhibits 3 through Exhibits 5.

5.0 **PROCEDURE**

- 5.1 This procedure is to be initiated upon declaration of any Emergency Classification specified in the Emergency Plan or when directed by the Emergency Director.
- 5.2 Emergency Actions

NOTE

The steps in this section are based on the expected sequence of activation of the RAC. The actual sequence should be based on when qualified personnel arrive in the facility.

- A. The on-shift RAC shall activate the radiological assessment function by reporting to the Control Room and performing the steps in the on-shift RAC checklist (Exhibit 1).

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B. The IREO RAC shall relieve the on-shift RAC and direct the radiological assessment function by assigning appropriate personnel to assume those positions and perform the actions listed for those positions as follows (in the absence of appropriate personnel, the Radiological Assessment Coordinator shall assume these positions and perform the essential actions for those positions):

- Radiological Assessment Coordinator (RAC):
Report to Emergency Control Center and perform the RAC Checklist (Exhibit 2).
- Radiological Engineering Support:
Report to the Emergency Control Center and complete the Radiological Engineering Support Checklist (Exhibit 3).
- Radiological Line Communicator (RAC Support Staff):
Report to the Emergency Control Center and complete the Radiological Line Communicator Checklist (Exhibit 4).
- RAC/OSC Communicator (RAC Support Staff):
Report to the Emergency Control Center and complete the RAC/OSC Communicator Checklist (Exhibit 5).

5.3 Final Conditions

5.3.1 The radiological assessment function is operational with the desired positions manned and functional. Communications are established.

5.4 Post Event Actions

5.4.1 An inventory of the RAC Area of the ECC is required to be performed by the end of the workday following the end of the event. The inventory is the responsibility of Rad Con Field Operations. Notify the Manager, Rad Con Field Ops. of the need to perform the inventory in accordance with Procedure TEP-ADM-1300.01, Maintaining Emergency Preparedness.

6.0 REFERENCES

- 6.1 TMI Emergency Plan
- 6.2 TMI Emergency Plan Implementing Procedures
- 6.3 6610-PLN-4200.02, Emergency Dose Calculation Manual (EDCM)

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7.0 **EXHIBITS**

Exhibit 1 - On-Shift RAC Checklist

Exhibit 2 - IREO Duty Roster RAC Checklist

Exhibit 3 - Radiological Engineering Support Checklist

Exhibit 4 - Radiological Line Communicator Checklist

Exhibit 5 - RAC/OSC Communicator Checklist

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On-Shift RAC Checklist

- 1.0 **The On-Shift RAC should perform the following until relieved by the IREO RAC or by a more senior qualified individual. This checklist need not be completed by the On-Shift RAC prior to turnover per Step 1.11.**

NOTE

The **bold underlined** steps below are particularly important in the early stages of an emergency. They should be performed promptly and in an orderly manner.

- 1.1 **Energize the RAC Computer.**
- 1.2 **Start a log** of activities performed.
- 1.3 **Call out additional resources** if they are needed. If no additional resources are needed at this time, skip the step but reconsider it later as needs change.
 - 1.3.1 For the duty roster RAC, determine from the Emergency Director (ED) if the duty roster has been called out. If not, get the RAC's phone number from the ED and call him/her.
 - 1.3.2 For call-out of additional R.C. Techs, obtain (or have someone obtain) phone numbers from the Rad Con Field Ops phone list and call (or have someone call) the needed techs.
- 1.4 **Determine release pathway.** Consult with the ED or his/her designee to determine the pathway of any radioactive releases from the plant.

NOTE

Refer to the Emergency Dose Assessment User's Manual section of the EDCM located in the RAC locker for guidance in performing dose projections.

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- 1.5 **Obtain and validate the initial dose projection within 15 minutes.**
- 1.5.1 **Select the RAC Spreadsheet** icon from the desktop of the RAC Computer.
- 1.5.2 **Go to the release pathway** specified by the ED.
- 1.5.2.1 Select the Update Plant Data option to import PPM and Met Data.
- 1.5.2.2 If the pathway is being monitored by an RMS monitor, use the RMS option for that pathway.
- 1.5.2.3 If the pathway is not being monitored by an RMS monitor, use the leak rate option for that pathway.
- 1.5.2.4 Verify that the PPM and Met Data is current (15 minutes old or less). If not, all data will need to be input manually.
- 1.5.2.5 Enter data not available from the PPM as specified by the input sheet.
- 1.5.2.6 Edit any PPM or Met Data that is not believed to be accurate.
- 1.5.2.7 Print dose projection.
- 1.5.3 **Validate the dose projection** by performing the following checks:
- Verify that the correct release pathway is being used.
 - Verify that the monitor input data is accurate and appropriate (e.g. no calibrations in progress).
 - Verify the release duration with the ED.
 - Verify that the dose projection results are consistent with other indications.
- 1.5.4 **Use the Total Dose Option** to verify no other pathways are contributing to the offsite dose.
- 1.5.5 **If power is lost to the RAC computer**, request assistance from Operations in obtaining power. An extension cord is available in the RAC locker.
- 1.6 **Review the dose projection with the ED.** Ensure the ED understands the nature of the dose projection (e.g. bounding calculation, contingency projection, "what-if", etc.) and the precision or uncertainty associated with the dose projection..
- 1.7 **Review the Emergency Classification with the ED** as it relates to current radiological parameters and evaluate the need to escalate to a higher classification.

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1.8 **Advise the ED on any of the following** issues if they apply. Skip any that do not apply but reconsider them as the emergency conditions change.

- Protective Action Recommendations (PAR) (see the PAR logic diagram in procedure EPIP-TMI-.02, Emergency Direction, available from the ED).
- On-site assembly and site evacuation of non-essential personnel (see the table at the end of this exhibit for guidance).

NOTE

The automated Emergency Report Form that is produced by ED automatically suggests assembly location and evacuation routes contained on the table in this exhibit.

- Contaminated and/or injured employees and any decontamination efforts.

1.9 **Consider dispatching a field monitoring team** if the dose projection indicates the potential for abnormal radiological conditions off-site.

1.9.1 To activate field teams:

- Perform radio checks with the field team(s).
- Assign and record field team designations (e.g. Alpha, Bravo, etc.)
- Obtain and record names and SSN's for all field team members.
- Obtain and record year-to-date TEDE for all field team members.
- Inform team members of the current wind direction and speed and display it on the EPZ map.

1.9.2 **Field monitoring team placement and direction:** consider the following guidelines for placing and directing field team(s).

A. For ground level releases (highest doses projected at site boundary) -

- Place the first field team downwind at the site boundary.
- Place the second team (if dispatched) off-site, downwind and as near to the site as possible.

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- B. For elevated releases (highest doses projected at some distance from the site) -
 - Place the first field team downwind at the location where the highest dose is projected.
 - Place the second team (if dispatched) downwind nearer to the site than the first team (results from this team aid in determining if the plume touched down closer than projected).
 - C. Instruct the team(s) to scan across the plume and attempt to locate plume centerline.
 - Provide a definite start point, direction of travel and an end point for scanning (e.g. "scan for plume centerline starting at NNE31, travel toward the Southeast passing through NE31 and continue to ENE31").
- 1.10 **BRP call back:** Within 45 minutes of event declaration notify the ECC Communications Coordinator whether the BRP has called back to the RAC.
- 1.11 **Provide a turnover to the IREO RAC** upon arrival.

EXHIBIT 1
On-Shift RAC Checklist

**Guidelines for Selection of On-Site Emergency Assembly Area
and Evacuation Route for Non-Essential Personnel**

Wind Direction (from)	On-Site Emergency Assembly Area To Use	Route to Emergency Assembly Area	Gate To Be Used For Site Evacuation	Off-Site Remote Assembly Area To Be Used For Site Evacuation
1° to 80°	Warehouse 1	<p>Personnel in the NOB, OSF, Protected Area and other locations near Unit 1 use most direct route to Warehouse 1.</p> <p>Personnel in the Unit 2 Admin Bldg, Bldg 222, Transportation and other locations near Unit 2 travel by personal vehicle to Warehouse 1.</p>	North Gate	Training Center
81° to 170°	Warehouse 3	<p>Personnel in the NOB, OSF, Protected Area and other locations near Unit 1 walk to Warehouse 3 via the East side of the plant.</p> <p>Personnel in the Unit 2 Admin Bldg, Bldg 222, Transportation and other locations near Unit 2 use most direct route to Warehouse 3.</p>	North Gate	Training Center
171° to 240°	Warehouse 3	<p>Personnel in the NOB, OSF, Protected Area and other locations near Unit 1 should go directly to their personal vehicles and drive to the parking lot south of the Unit 2 Admin Bldg and then walk to Warehouse 3.</p> <p>Personnel in the Unit 2 Admin Bldg, Bldg 222, Transportation and other locations near Unit 2 should use the most direct route to Warehouse 3.</p>	South Gate	Training Center
241° to 320°	Warehouse 1	All site personnel should take the most direct route to Warehouse 1.	North Gate	Training Center or EOF (see Note)
321° to 360°	Warehouse 1	All site personnel should take the most direct route to Warehouse 1.	North Gate	Training Center

NOTE

Use the Training Center as the Off-Site Remote Assembly Area unless the Dose Projection between the Exclusion Area Boundary and 1 mile is greater than 5 mREM/hr CDE or 1 mREM/hr TEDE.

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EXHIBIT 2

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IREO Duty Roster RAC Checklist

1.0 **The IREO RAC should perform the following upon reporting to the Emergency Control Center:**

- _____ 1.1 **Obtain a turnover** from the On-Shift RAC if staffed. If the on-shift RAC position was not staffed skip to Step 1.2.
- _____ 1.2 **Review Exhibit 1 and ensure applicable steps have been implemented.**

NOTE

The following steps should be considered and, if needed, implemented. These steps need not be performed in the sequence listed and may be performed multiple times. The RAC should periodically review this checklist to ensure that necessary steps are being performed.

- _____ A. **Assign personnel to staff positions** described in Exhibits 3 through 5.
- B. **Maintain a log** of activities performed.
- C. **Refer to the Emer. Dose Assessment User's Manual** contained in the EDCM (Ref. 6.3) for dose assessment guidance.
- D. Review dose projections with the ED.
 - Ensure the ED understands the nature of the dose projection (e.g. bounding calculation, contingency projection, "what-if", etc.) and the precision or uncertainty associated with the dose projection.
- E. Advise the ED on:
 - Protective Action Recommendations (PAR) (see the PAR logic diagram in procedure EPIP-TMI-.02, Emergency Direction, available from the ED)
 - On-site assembly and site evacuation of non-essential personnel (see the table at the end of this exhibit for guidance).
 - Radiological conditions:
 - In-plant (including habitability concerns in emergency facilities),
 - On-site and
 - Off-site

EXHIBIT 2

NOTE

Consideration should be given to locations on-site where personnel may remain. Examples are:

- Security Posts
- Warehouses
- Communications
- Medical

- Employee doses and emergency dose extensions.
- Contaminated employees, decontamination efforts and any use of Thyroid Blocking agent.

- F. **Emergency classifications:** Recommend emergency classifications to the ED based on radiological conditions and Emergency Action Levels (EAL).
- G. **Fuel damage assessment:** Provide any necessary assistance to the TSC for the assessment of fuel damage and report results to the ED.

NOTE

While the RAC should provide assistance to the TSC in assessing the degree of core damage, the 'official' damage assessment values will be determined by the TSC.

- H. **Primary to secondary leak rate determination:** If a primary to secondary leak exists, use the Emer. Dose Assessment User's Manual contained in the EDCM (Ref. 6.3) to assist in determining primary to secondary leak rate. Coordinate with the TSC in making this determination.

NOTE

While the RAC should provide assistance to the TSC in estimating the primary to secondary leak rate, the 'official' leak rate values will be determined by the TSC.

- I. When the EACC is staffed turn over field monitoring teams to the EACC.
- J. **Dose projection/field readings comparison:** use the following guidance for comparing field readings (field team or Reuter Stokes readings) and dose projections.
- If field readings are within a factor of 10 less than (and not more than) the corresponding projected value, a very good correlation exist between the two.
 - Field iodine sample results, after being converted to thyroid dose rate (CDE per hour), can be directly compared to projected thyroid dose rate.

EXHIBIT 2

- Field team closed window dose rates and Reuter Stokes readings can be compared with DDE values in dose projections.
 - There is no dose projection value that corresponds directly to field team open window readings. Open window readings that are higher than closed window readings indicate that the plume is at ground level at that location.
- K. **Samples:** Consider the need for special samples (e.g. MAP-5, CATPASS, RCS-PAS) to provide more precise source term data for dose projections.
- Samples taken directly from the effluent pathway (e.g. condenser off-gas, MAP-5, etc) provide the most precise source term data.
 - A sample from the Reactor Building atmosphere (i.e. CATPASS) will improve the precision of source term data for releases from the Reactor Building but will likely be less precise than effluent samples.
 - RCS sample results are useful in determining the extent of fuel damage and can be used to improve the precision of the source term but to less an extent than effluent samples.

NOTE

The Emer. Dose Assessment User's Manual contained in the EDCM (Ref. 6.3) provides guidance on which sample(s) to obtain under various conditions.

- _____ L. **Communication with BRP:** Establish communication with the Bureau of Radiological Protection (BRP) and provide TMI dose projections to them.
- _____ M. **Communication with NRC:** If the NRC requests continuous communication on the Health Physics Network (HPN), establish and maintain communication on the HPN with them and:
- Assign an extra RAC staff member as soon as one is available or,
 - Request an additional communicator from the ED Assistant.
- N. Coordinate all Radiological Controls activities on-site, including:
- Access control to areas affected by the emergency.
 - Personnel dose monitoring and control (including dose extensions).
 - In-plant surveys and samples.

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- O. **Thyroid Blocking:** Implement the Thyroid Blocking procedure (EGIP-COM-.44) if it is anticipated that person(s) will be exposed to quantities of radioiodine sufficient to cause a thyroid dose of 25 REM (CDE) or greater.

- P. Interface with the Group Leader- Radiological and Environmental Controls (GL-R&EC) regarding:
 - Dose projections
 - In-plant and on-site conditions
 - Protective actions

- Q. **Recommend source term reduction techniques** appropriate to the release pathway (e.g. RB spray, raising OTSG levels, etc). See the Emergency Dose Assessment User's Manual in Ref 6.3 for specific information.

- R. Evaluate the need for eating and drinking restrictions in-plant.
 - If results of habitability monitoring allow, recommend that the E.D. lift restrictions, as needed.
 - Ensure habitability monitoring continues.

- S. **Review radiological information in press releases.** Specific examples of radiological information that should not be included in press releases are:
 - Dose projections
 - Protective action recommendations
 - Technical terms
 - Acronyms and abbreviations

- T. Trend effluent release data, RMS, sample results, field team readings and dose projections.

- U. **Establish a watch bill** to cover the RAC and all staff positions on a 24 hour-per-day basis.

EXHIBIT 2
IRES Duty Roster RAC Checklist

**Guidelines for Selection of On-Site Emergency Assembly Area
and Evacuation Route for Non-Essential Personnel**

Wind Direction (from)	On-Site Emergency Assembly Area To Use	Route to Emergency Assembly Area	Gate To Be Used For Site Evacuation	Off-Site Remote Assembly Area To Be Used For Site Evacuation
1° to 80°	Warehouse 1	Personnel in the NOB, OSF, Protected Area and other locations near Unit 1 use most direct route to Warehouse 1. Personnel in the Unit 2 Admin Bldg, Bldg 222, Transportation and other locations near Unit 2 travel by personal vehicle to Warehouse 1.	North Gate	Training Center
81° to 170°	Warehouse 3	Personnel in the NOB, OSF, Protected Area and other locations near Unit 1 walk to Warehouse 3 via the East side of the plant. Personnel in the Unit 2 Admin Bldg, Bldg 222, Transportation and other locations near Unit 2 use most direct route to Warehouse 3.	North Gate	Training Center
171° to 240°	Warehouse 3	Personnel in the NOB, OSF, Protected Area and other locations near Unit 1 should go directly to their personal vehicles and drive to the parking lot south of the Unit 2 Admin Bldg and then walk to Warehouse 3. Personnel in the Unit 2 Admin Bldg, Bldg 222, Transportation and other locations near Unit 2 should use the most direct route to Warehouse 3.	South Gate	Training Center
241° to 320°	Warehouse 1	All site personnel should take the most direct route to Warehouse 1.	North Gate	Training Center or EOF (see Note)
321° to 360°	Warehouse 1	All site personnel should take the most direct route to Warehouse 1.	North Gate	Training Center

NOTE

Use the Training Center as the Off-Site Remote Assembly Area unless the Dose Projection between the Exclusion Area Boundary and 1 mile is greater than 5 mREM/hr CDE or 1 mREM/hr TEDE.

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Radiological Engineering Support Engineer Checklist

1.0 Perform the following:

NOTE

The following steps should be considered and, if needed, implemented. These steps need not be performed in the sequence listed and may be performed multiple times. The RESE should periodically review this checklist to ensure that necessary steps are being performed.

- _____ A. **Start a log** of activities performed.
- _____ B. **Perform dose projections** using the RAC computer.
 - **Refer to the Emergency Dose Assessment User's Manual** contained in the EDCM (Ref. 6.3) for guidance.
 - **Validate dose projections.** Perform the following checks in coordination with the RAC:
 - Verify that the correct release pathway is being used.
 - Verify that the monitor input data is accurate and appropriate (e.g. no calibrations in progress).
 - Verify the release duration.
 - Verify that the dose projection results are consistent with other indications.
 - Verify that the PPM and Met data are not more than 15 minutes old.
 - **If power is lost to the RAC computer**, request assistance from Operations in obtaining power. An extension cord is available in the RAC locker.
- _____ C. **Determine and log the time of reactor shut down.**
- _____ D. **Communicate with the GL-R&EC and the EACC.**
- _____ E. **Trend dose projections.**
- _____ F. **Generate source term data:** Edit input parameters and input sample results to refine the source term.

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- G. **Met. and forecast data:** Obtain current meteorological data and weather forecast data (short and long term) from the EACC for:
- Dose projections (e.g. "what if" projections)
 - Plume tracking
 - Site evacuation planning
 - Off-site protective action planning
- H. Evaluate the following inputs to verify that dose projections reflect actual conditions:
- Plant conditions
 - RMS data
 - RCS activity
 - Spiking factors
 - Meteorological data.
- I. **Confirm dose projections** by comparing with field team readings and/or Reuter Stokes readings.
- If field readings are within a factor of 10 less than, and not more than, the corresponding projected value a very good correlation exists.
 - Field iodine sample results, after being converted to thyroid dose rate (CDE per hour), should only be compared to projected thyroid dose rate.
 - Field team closed window dose rates and Reuter Stokes readings can be compared with DDE values in dose projections.
 - There is no dose projection value that corresponds directly to field team open window readings. Open window readings that are higher than closed window readings indicate that the plume is at ground level at that location.
- J. **Discuss Protective Action Recommendations (PAR) and Protective Action Guidelines (PAG) with the RAC.**
- The PAR logic diagram is contained in procedure EPIP-TMI-.02, Emergency Direction, available from the ED.
- K. **Perform "what if" dose projections** based on potential or anticipated:
- Plant status changes
 - Meteorological changes

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- L. **Coordinate with the TSC.** Assist the RAC in coordinating with the TSC for:
- **Primary to secondary leak rate determination.** Use the Emergency Dose Assessment User's Manual (Ref. 6.3) for guidance.
 - **Fuel damage class determination.**
 - The TSC will produce the "official" damage class value.
 - Provide input using the guidance in Emergency Dose Assessment User's Manual (Ref. 6.3).
 - Update dose projection system as appropriate.

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EXHIBIT 4

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Radiological Line Communicator Checklist

1.0 Perform the following:

NOTE

The following steps should be considered and, if needed, implemented. These steps need not be performed in the sequence listed and may be performed multiple times. The Radiological Line Communicator should periodically review this checklist to ensure that necessary steps are being performed.

- A. Maintain a log of information sent and received.
- B. Communicate with the following:
 - Group Leader - Radiological and Environmental Controls (GL-R&EC) at the EOF
 - Bureau of Radiological Protection (BRP)
 - Nuclear Regulatory Commission (on the HPN line).
- C. Provide a briefing on current plant status and recent changes to all persons on the Radiological Line.
- D. Pass requests from the RAC for off-site support to the EOF. Examples are:
 - Rad Con Technicians from other plants.
 - Equipment (e.g., radiation monitors, etc.)
 - Whole Body Counting
- E. If the NRC requests continuous communication on the HPN, establish and maintain communication on the HPN with them and request the RAC:
 - Assign an extra RAC staff member to man the HPN as soon as one is available or,
 - Obtain an additional communicator for the HPN from the ED Assistant.

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RAC/OSC Communicator Checklist

1.0 Perform the following:

NOTE

The following steps should be considered and, if needed, implemented. These steps need not be performed in the sequence listed and may be performed multiple times. The RAC/OSC Communicator should periodically review this checklist to ensure that necessary steps are being performed.

- A. Communicate between RAC and OSC
- B. Communicate with the Remote Assembly Area Personnel
- C. Maintain a Log of activities performed
- D. Provide Event Update to Rad Con Personnel in OSC
- E. Collect information on contaminated/injured personnel
- F. Handle requests for:
 - Activation of on/offsite field teams
 - In-Plant Radiological data, (surveys - dose rates, contamination levels)
 - Medical emergency information
 - Search and Rescue Information
 - Repair Team Information
 - Vehicle/Personnel Contamination Surveys for Site Evacuation.
- G. Interface for obtaining accident samples and sample results:
 - CATPASS: Containment Atmospheric Post Accident Sampling System
 - MAP-5: Particulate and Radioiodine Sample System on effluent pathways
 - RCS PASS: Reactor Coolant System Post Accident Sampling System
 - Radiation Monitoring System (RMS) samples for particulate, radioiodine, noble gas and tritium
 - Other plant samples as required (OTSG, secondary)

EXHIBIT 5

- H. Provide Guidance from RAC on in-plant radiological controls
- Keep OSC updated on events that may alter radiological conditions in the plant
 - Radiation Controls - e.g., posting of Turbine Building
- I. Obtain data on:
- Skin contaminations - levels and location of contamination
 - Dose extensions - extension limits, purpose of extensions, personnel receiving extensions
 - Personnel injuries - any radiological concerns
- J. Provide priority from the RAC to the Chemistry Coordinator on accident samples and analysis.

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Implementing Document

Number

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Onsite/Offsite Radiological/Environmental Monitoring

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Applicability/Scope

USAGE LEVEL

Effective Date

TMI Division

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DEC 8 2000

This document is within QA plan scope
Safety Reviews Required

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	Signature	Date
Procedure Owner	/s/ J. L. Whitehead	12/05/00
Approver	/s/ N. Brown	12/05/00

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Title Onsite/Offsite Radiological/Environmental Monitoring	Revision No. 12	

1.0 **PURPOSE**

The purpose of this procedure is to provide guidance to radiological and environmental monitoring teams for adequate onsite and offsite monitoring of radiation, contamination and airborne radioactivity levels, and environmental sample procurement, following the accidental release of radioactive materials to the environment. The procedure establishes monitoring team actions necessary to obtain data required to make valid radiological assessments.

2.0 **APPLICABILITY/SCOPE**

All TMI Emergency Radiological and Environmental Monitoring Team Personnel.

3.0 **DEFINITIONS**

- 3.1 Derived Air Concentration (DAC) - The airborne concentration of radioactive material that if breathed by a worker for one hour, results in an estimated Internal Whole Body Dose (CEDE) of 2.5 mrem, or in the case of radioiodine, results in an estimated thyroid dose (CDE) of 25 mrem.
- 3.2 External Whole Body Dose (DDE) - The whole body dose from sources external to the body. Typically this is the dose recorded on a whole body TLD. Official term: Deep Dose Equivalent.
- 3.3 Internal Whole Body Dose (CEDE) - The estimated risk-based dose to the whole body resulting from the intake of radioactive material. Official term: Committed Effective Dose Equivalent.
- 3.4 Thyroid Dose (CDE(th)) - the dose to the Thyroid resulting from the intake of radioactive material. Official term: Committed Dose Equivalent - thyroid.
- 3.5 Total Whole Body Dose (TEDE) - the sum of the External Whole Body Dose (DDE) and the Internal Whole Body Dose (CEDE).

4.0 **RESPONSIBILITIES**

- 4.1 The Radiological/Environmental Monitoring Teams are responsible for implementing this procedure.

5.0 **PROCEDURE**

5.1 Implementation Criteria

- 5.1.1 This procedure is to be initiated upon the direction of the Emergency Director, the Radiological Assessment Coordinator (RAC), the Environmental Assessment Coordinator (EAC), or their designee.

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5.2 Emergency Actions

NOTE

Team members utilize additional radiological precautions when approaching any of the following:

1. 4 REM Year-to-Date Total Whole Body Dose (TEDE).
2. 25 REM Thyroid Dose (CDE) during this event.

Minimize time spent in the plume especially in areas projected (by the RAC/EACC) to have high airborne radioactivity. Utilize protection such as thyroid blocking agent and/or respirators if advised by the RAC or the Env. Assessment Command Center (EACC).

INITIALS

_____ 5.2.1 Upon assignment as a monitoring team member, obtain emergency equipment and emergency vehicle.

5.2.1.1 Emergency Equipment consists of the following:

- Emergency Equipment/Instrument Kit (suitcase).
- Air Sampler.
- Portable Two Way Radio with spare battery.
- Respirators for Team Members.

_____ 5.2.2 Verify that the seal on the emergency kit was intact.

5.2.2.1 If the emergency kit seal was broken, conduct a brief inventory of the major pieces of equipment.

NOTE

There is no need to inventory a kit if its seal was intact.

_____ 5.2.3 Record the following information on Exhibit 6: 1) Name, 2) SSN, 3) Date, 4) Current Year-to-date Total Whole Body Dose (TEDE). Item 4 may be obtained from the Rem-on-Line System or may be transmitted via radio while the team is in transit to their first monitoring location.

_____ 5.2.4 Operationally check all radiation meters and portable air sampler (battery check, air flow check, visual inspection).

A. Obtain properly calibrated replacements for any meters or samplers found to be unsatisfactory.

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INITIALS

- B. Inform the RAC/EACC of equipment problems and, if needed, request assistance in obtaining replacements.

NOTE

If personnel intend to take air samples in areas inaccessible to vehicles (e.g., Shelley Island), a battery powered air sampler should be obtained for this purpose. A portable generator and an ordinary air sampler can be used if a battery powered air sampler is not available. Check the fuel level in the portable generator and operationally test it by running it momentarily.

- _____ 5.2.5 Fill (or verify filled) the noble gas sampling devices (plastic bottles or marinelli beakers) with water prior to leaving the P.C. or EOF.
- _____ 5.2.6 Issue self reading dosimeters (SRPDs or ESRDs) to team members.
- _____ 5.2.7 Ensure each team member is wearing a TLD.
 - A. Team members responding from on-site should retain their TLD. Team members responding from the EOF should either retain their personal TLD (if available) or be issued a TLD from the supply of emergency TLDs at the EOF.
 - B. Use the individual dose log, Exhibit 6 to track each team member's dose.
 - C. At a minimum, each team member shall enter his/her SRPD/ESRD reading and time when he/she begins monitoring activities and again when he/she returns from the field.
 - D. SRPD/ESRD readings may be entered on the individual exposure log more frequently if a team member so desires (eg., when entering and leaving the plume).

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- E. Keep the RAC/EACC informed of field monitoring team doses.
- Advise the RAC/EACC if any team member's dose approaches:
 - 4 REM year-to-date total whole body dose (TEDE) or
 - 25 REM thyroid dose (CDE) during this event.
 - Recommend that the RAC/EACC consider the need for team relief.

NOTE

Relief should be conducted in a low radiation area.

- Recommend that the RAC/EACC consider authorizing the use of thyroid blocking agent if field monitoring team thyroid doses are projected to be 25 REM (CDE) or greater.
- If the RAC/EACC authorizes the use of thyroid blocking agent, complete a copy of Exhibit 9 for each field team member.
- If the RAC/EACC advises the use of respirators, use extreme caution if operating a vehicle while wearing a respirator.

INITIALS

_____ 5.2.8 Ensure your survey meter is turned on.

NOTE

The survey meter should remain all times during the performance of monitoring team duties.

_____ 5.2.9 Perform radio check with the RAC/EACC (see Exhibit 10 for radio operating guidelines).

NOTE

Radio transmission may affect accuracy of portable instrument response. Information should not be transmitted while taking readings.

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WARNING

Utilize roof top strobe light and vehicle's 4-way flashers whenever you are stopped along the road or travelling significantly slower than the speed limit.

INITIALS

- _____ 5.2.10 Proceed to the designated monitoring point or other location as directed by the RAC/EACC. (See map in emergency kit for specifically designated monitoring point locations.)

NOTE

The following steps should be implemented as they are needed. These steps need not be performed in the sequence listed and may be performed multiple times. The Field Monitoring Team should periodically review these steps to ensure that necessary actions are being performed.

- A. As time permits, keep a log of your major activities or the Major Activities log, Exhibit 7.
- B. Perform radiological surveys/sampling as directed by the RAC/EACC at designated monitoring locations.
 - Use the appropriate exhibit for the type of survey/sample requested:
 - Exhibit 1 Radiation Surveys (including plume centerline scans).
 - Exhibit 2 Radioiodine and Particulate Air Samples.
 - Exhibit 3 Noble Gas Air Samples.
 - Exhibit 4 Contamination Surveys.
- C. If radio communications are lost, attempt to re-establish radio communications with the RAC/EACC. Move to higher ground if possible.

NOTE

If the portable radio displays "CC SCAN" this indicates that the radio is in a bad location or it is out of range.

- If radio communications cannot be re-established drive to the nearest telephone and call the RAC or the EACC (as appropriate). A list of important phone numbers is contained in Exhibit 8.
- D. Minimize personnel exposures by moving out of areas of high radiation when counting samples, recording data or awaiting further instructions.
- E. Ensure all team members keep track of their doses in Exhibit 6.

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INITIALS

- _____ F. Maintain all completed exhibits for permanent records.
- _____ G. Return all completed forms to Rad Con Coordinator at the OSC or other location as directed by the RAC/EACC.
- _____ H. Retain all samples for later counting and analysis.

NOTE

Samples may be returned to the Rad Con Lab or designated collection point at a convenient time as directed by the RAC/EACC.

- _____ I. When the Environmental Assessment Command Center (EACC) is activated and takes control of monitoring teams, begin reporting offsite surveys to the EACC.
- _____ J. Upon relief or upon completion of monitoring duties, team members shall frisk themselves in a low background area and frisk the tires, seats, floor, and foot pedals.
- If any of the above are found to be greater than 100 CPM above background, inform the RAC/EACC and ask for instructions.
 - Recommend to the RAC/EACC that the team be scheduled for a whole body count.
- _____ K. If requested by the RAC/EACC, initiate an RWP to cover the duties performed as a monitoring team at the completion of monitoring team activities (if not already done).

5.3 Additional Actions for Environmental Monitoring Teams

- _____ A. Determine from the EACC the types of samples to be collected. The EACC shall also determine the location and frequency of collection.
- _____ B. Collect and label all samples in accordance with environmental sampling procedures.

NOTE

Plastic disposable gloves shall be worn during the sample collection process.

- _____ C. Return all samples to the EACC (or other location as specified by the EAC) for analysis and retention.

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5.4 Final Conditions

INITIALS

- _____ A. Radiological/Environmental monitoring has been completed and all samples submitted for analysis/retention as directed by the RAC/EACC.
- _____ B. Field monitoring equipment has been returned to the location specified by the RAC/EACC.
- _____ C. If field team members have taken thyroid blocking agent, they should contact company designated medical personnel to determine how long they should continue to take it.

6.0 REFERENCES

- 6.1 6510-PLN-4520.01, Radiological/Environmental Monitoring Program Plan

7.0 EXHIBITS

- 7.1 Exhibit 1, Radiation Surveys
- 7.2 Exhibit 2, Radioiodine and Particulate Air Samples
- 7.3 Exhibit 3, Noble Gas Air Samples
- 7.4 Exhibit 4, Contamination Surveys
- 7.5 Exhibit 5, Radiation/Air/Smear Sample Log
- 7.6 Exhibit 6, Individual Dose Log
- 7.7 Exhibit 7, Major Activities Log
- 7.8 Exhibit 8, Important Telephone Numbers
- 7.9 Exhibit 9, Field Team Thyroid Blocking Agent Administration Form
- 7.10 Exhibit 10, Field Team Radio Operating Guidelines

EXHIBIT 1

Radiation Surveys

To perform radiation surveys:

NOTE

Sections A & B below should be implemented as needed based on direction from the RAC/EACC. These sections can be repeated as needed.

A. Plume centerline scans:

1. General Guidance:

- Scanning is most effective when the team slowly travels across the plume at approximately a 90° angle to the wind direction.
 - Scanning should be performed with a frisker or a survey instrument. If a survey instrument is used, the probe window should be open.
 - In inclement weather, the instrument probe should be covered with a surgeon's glove or plastic bag to keep it dry.
2. Ask the RAC/EACC to specify a start and stop point for scanning. If the RAC/EACC provides no direction, consult the map and choose a route which runs as nearly perpendicular as possible to the expected plume direction.
 3. Proceed to the start point with the survey instrument/frisker turned on.
 4. Scan by driving slowly (~ 15 m.p.h.) while holding the instrument probe outside the vehicle.
 5. Locate the point where the instrument reading is highest.
 - 5.1 Scan until the reading rises and then begins to decrease.
 - 5.2 Reverse direction and return to the location where the maximum reading was obtained.
 - 5.3 If the maximum reading persists for a definite distance (i.e., a tenth mile or greater), find the approximate midpoint of that distance.
 6. Report the plume centerline location and maximum reading to the RAC/EACC. When reporting the location, give any landmarks which may help fix your location on a map (e.g., intersections, public buildings, streams, etc.).
 7. Perform a stationary survey as described below unless directed otherwise by the RAC/EACC.

EXHIBIT 1

B. Stationary Surveys:

1. Ensure the probe window is closed and hold the instrument probe at waist level while standing outside the vehicle.
 - In inclement weather, the instrument probe should be covered with a surgeon's glove or plastic bag to keep it dry.
2. Obtain a reading by observing the instrument's needle for several seconds.
 - Mentally average the needle fluctuations to arrive at an average reading.
3. Obtain 3 readings per Step 2 above over a five minute period unless directed otherwise by the RAC/EACC.
4. Record the following in Exhibit 5.
 - 4.1 Record the 3 readings obtained per Step 3. If only 1 reading was taken, record it as "Reading 1".
 - 4.2 If 3 readings were taken, average them and record the average.
 - 4.3 Record the date, time and location of the reading(s).
5. Obtain one reading with the probe window open.
 - 5.1 Record the reading (in mR/hr) in Exhibit 5.
6. Report the location, time, average closed window reading and open window reading to the RAC/EACC.

EXHIBIT 2

Radioiodine And Particulate Air Samples

To perform air samples for Iodine and/or Particulate:

NOTE

If possible, load the air sampler with the Silver Zeolite cartridge and particulate filter prior to entering the plume.

1. Unscrew the filter and cartridge holder rings from the air sampler head and install a new Silver Zeolite cartridge and particulate filter.
 - 1.1 Ensure that the arrow on the side of the Silver Zeolite cartridge points toward the air sampler.
 - 1.2 Ensure that the particulate filter is installed such that the side of the filter which has a fibrous appearance is closest to the Silver Zeolite cartridge.
 - 1.3 Reassemble the air sampler head.

NOTE

The sampler flow rate, measure with both a particulate filter and a Silver Zeolite cartridge in place, is written on the air sampler's calibration sticker. The Silver Zeolite cartridge must be in place to ensure obtaining calibrated air flow rate even if an iodine sample has not been requested and the cartridge will not be analyzed in the field.

2. Ensure the following prerequisites and precautions are met:
 - The air sampler shall be placed outside the vehicle or in an open vehicle door or window.
 - Do not place the sampler on the ground or on known contaminated surfaces.
 - Keep the sampler away from vehicle exhaust gases.
 - Protect the sampler from rain and snow.
 - All samples shall be labeled and saved for further analysis.
 - Do not point the air sampler inlet toward any object which may restrict sampler air flow.
 - Do not stand directly in front of the sampler inlet when the sampler is running or allow loose clothing to restrict airflow.

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EXHIBIT 2

3. Using the sampler's self timer (or a stopwatch or wristwatch if the sampler is not so equipped) draw a 300 liter (approximately) air sample.

3.1 Use the table below and the sampler's posted flow rate to determine sampler run time. Sampler's with adjustable flow rate should be set to the highest flowrate possible not to exceed 50 lpm (1.8 cfm) and run for approximate time according to the table below.

<u>Posted or Set Flow Rate</u>	<u>Sampler Run Time</u>
≥ 19 < 21	15 minutes
≥ 21 < 25	13 minutes
≥ 25 < 29 lpm	11 minutes
≥ 29 < 32 lpm	10 minutes
≥ 32 < 36 lpm	9 minutes
≥ 36 < 40 lpm	8 minutes
≥ 40 < 46 lpm	7 minutes
≥ 46 < 50 lpm	6 minutes

NOTE

The RAC/EACC or their designee may direct that sampler run time be shortened to reduce time spent in the plume or to reduce the "lead time" in obtaining sample results or lengthened to provide better sensitivity in low concentration areas.

4. Fill out an air sample label with date, time, your name, location, air sampler run time, and air sampler flow rate.

4.1 Also record this data on Exhibit 5.

5. To evaluate the Silver Zeolite cartridge in the field, perform the following steps:

5.1 Obtain a general area background count rate with the E140N/HP260 pancake probe at approximately waist level.

5.1.1 If the background is more than 200 cpm move to a location where background is acceptable (i.e. ≤ 200) and proceed with Step 5.2.

5.1.2 If background is 200 cpm or less, go to Step 5.3.

NOTE

If you cannot find an area where background is ≤ 200 cpm, ask the RAC/EACC for advice.

5.2 At the low background area run the air sampler for approximately 3 seconds to flush the cartridge.

EXHIBIT 2

- 5.3 Record the background count rate at the sample counting location on the sample label and on Exhibit 5.
- 5.4 Remove the cartridge from the sampler head and place it in a ziplock bag.

NOTE

Surgeons gloves should be used if the cartridge must be handled and contamination is expected.

- 5.5 Count both sides of the Silver Zeolite cartridge through the ziplock bag.
 - 5.5.1 Record the higher count rate as "gross cpm" on the sample label and on Exhibit 5.
- 5.6 Subtract the background cpm from the gross cpm and record the result as "Net Cpm" on the sample label and on Exhibit 5.
- 5.7 Place the sample label in the ziplock bag and retain the sample for later analysis.

6. To evaluate a particulate filter in the field, perform the following steps:

- 6.1 Obtain a general area background count rate with the E140N/HP-260 pancake probe at approximately waist level.
- 6.2 If the background count rate is more than 200 cpm move to a location where background is acceptable (i.e. ≤ 200 cpm).

NOTE

If you cannot find an area where the background is ≤ 200 cpm, ask the RAC/EACC for advice.

- 6.3 Unscrew the filter holder section of the sampler head from the silver zeolite cartridge holder section such that the particulate filter is held in place in the removed section.
- 6.4 Obtain a gross count rate on the particulate filter by holding the collection side of the filter holder against the HP-260 pancake probe.
- 6.5 Record the count rate as gross CPM on the sample label and on Exhibit 5.
- 6.6 Unscrew the retainer ring from the filter holder and, using tweezers, remove the filter from the holder.
- 6.7 Place the filter in the coin envelope.
- 6.8 Place the coin envelope in a ziplock bag (if an iodine sample was taken, use the same ziplock bag).

EXHIBIT 2

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- 6.9 Reinstall the retainer ring onto the filter holder and re-count the filter holder without the particulate filter in place.
- 6.9.1 Enter this count rate as Background CPM on the sample label and on Exhibit 5.
- 6.10 Subtract Background CPM from Gross CPM and record the results as NET CPM on the sample label and on Exhibit 5.
- 6.11 Place the sample label in the ziplock bag and retain the sample for later analysis.
- 6.12 Report the following information from the sample label to the RAC/EACC:
- Location
 - Sample time
 - Net cpm for both silver zeolite cartridge and particulate filter
 - Run time
 - Flow rate

EXHIBIT 3

Noble Gas Air Samples

To obtain noble gas air samples when directed by the RAC/EACC, proceed with Step 1 below:

1. Fill (or obtain a prefilled) clean container (500 ml [0.5 liter] or larger bottle or marinelli beaker) with clean water (i.e., not affected by plant release) (this can be done before going into the field).

NOTE

Field monitoring kit contains water filled plastic bottles for noble gas sampling.

2. When a sample is needed:
 - 2.1 Stand well away from vehicles or other obstructions.
 - 2.2 Pour the water from the container.
 - 2.3 Cap or close the container.
3. Label the sample container with the date/time of collection, and location.
4. Record the same information on Exhibit 5.

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Contamination Surveys

To perform contamination surveys (if directed by the RAC/EACC):

1. Obtain smears and coin envelopes from the emergency kit, label envelope with date, time and location.
2. Wipe the smear over a 100 cm² area (4" x 4" area).
3. Count the background with the E140N w/HP-260 probe (or equiv.).
4. If background is greater than 200 cpm:
 - 4.1 Move to a location where background is ≤ 200 cpm.
 - 4.2 Re-count background and the smear.

NOTE

If you cannot find an area where the background is ≤ 200 cpm, ask the RAC/EACC for advice.

Count the smear with the E140N w/HP-260 probe (or equiv.).

6. Enter gross cpm and Bkg. cpm in Exhibit 5.
7. Subtract Bkg. cpm from gross cpm to obtain net cpm.
8. Enter net cpm on Exhibit 5.
9. Report location, time and net cpm for each smear to the RAC/EACC.
10. Save smears in coin envelope for later analysis as directed by the RAC/EACC.

EXHIBIT 5

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Date _____

Radiation/Air/Smear Sample Log

Note: Report only the data in the bold outlined boxes to the RAC/EACC

Location	Time	Open Window * E520 (mR/hr)	Closed Window E520 (mR/hr) or Frisker (cpm)				
			Reading 1	Reading 2	Reading 3	Average	
						Air Sampler	
	Time	Sample Type	Gross CPM	Bkg CPM	Net CPM	Run Time	Flow Rate
		Iodine					
		Particulate					
		Smear					
		Noble Gas					

Location	Time	Open Window * E520 (mR/hr)	Closed Window E520 (mR/hr) or Frisker (cpm)				
			Reading 1	Reading 2	Reading 3	Average	
						Air Sampler	
	Time	Sample Type	Gross CPM	Bkg CPM	Net CPM	Run Time	Flow Rate
		Iodine					
		Particulate					
		Smear					
		Noble Gas					

Survey Meter Type _____ Serial No. _____ Cal. Due _____
 Air Sampler Type _____ Serial No. _____ Cal. Due _____
 Counting Inst. Type _____ Serial No. _____ Cal. Due _____
 Technician _____

* Under normal circumstances, open window readings taken with the E-520 are recorded in cpm, however, during emergencies the mR/hr scale shall be used to permit the RAC/EACC to more easily compare the relative magnitudes of open window and closed window readings.

**EXHIBIT 6
INDIVIDUAL DOSE LOG**

Date: _____

NAME (PRINT)	SOC. SEC. #	YTD TOTAL WHOLE BODY DOSE (TEDE) (A)

	START TIME	BEGINNING SRPD/ESRD READING (B)	STOP TIME	ENDING SRPD/ESRD READING (C)	EXTERNAL WHOLE BODY DOSE (DDE) (D)	APPROX. THYROID DOSE (CDE) (E)*	APPROX. INTERNAL WHOLE BODY (CEDE) FROM IODINE (F)*	APPROX. TOTAL WHOLE BODY DOSE (TEDE) (G)	TOTAL THYROID DOSE (CDE) (H)
1					(C1-B1)			(A+D1+F1)	(E1)
2					(C2-B2)			(G1+D2+F2)	(H1+E2)
3					(C3-B3)			(G2+D3+F3)	(H2+E3)
4					(C4-B4)			(G3+D4+F4)	(H3+E4)
5					(C5-B5)			(G4+D5+F5)	(H4+E5)
6					(C6-B6)			(G5+D6+F6)	(H5+E6)

NAME (PRINT)	SOC. SEC. #	YTD TOTAL WHOLE BODY DOSE (TEDE) (A)

	START TIME	BEGINNING SRPD/ESRD READING (B)	STOP TIME	ENDING SRPD/ESRD READING (C)	EXTERNAL WHOLE BODY DOSE (DDE) (D)	APPROX. THYROID DOSE (CDE) (E)*	APPROX. INTERNAL WHOLE BODY (CEDE) FROM IODINE (F)*	APPROX. TOTAL WHOLE BODY DOSE (TEDE) (G)	TOTAL THYROID DOSE (CDE) (H)
1					(C1-B1)			(A+D1+F1)	(E1)
2					(C2-B2)			(G1+D2+F2)	(H1+E2)
3					(C3-B3)			(G2+D3+F3)	(H2+E3)
4					(C4-B4)			(G3+D4+F4)	(H3+E4)
5					(C5-B5)			(G4+D5+F5)	(H4+E5)
6					(C6-B6)			(G5+D6+F6)	(H5+E6)

* See for estimation method next page

EXHIBIT 6

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NOTE

Notify the RAC/EACC when any team member approaches either of the following:

- 4 REM Year-to-Date Total Whole Body Dose (TEDE).
- 25 REM Thyroid Dose (CDE) during this event.

A rough approximation of the iodine derived air concentration (DAC), thyroid dose (CDE) and internal whole body dose (CEDE) can be obtained using the following relationship:

Every 1000 net cpm on the silver zeolite cartridge equals roughly:

- 20 DAC Iodine,
- 500 mREM/hr Thyroid Dose (CDE) and
- 15 mREM/hr Internal Whole Body Dose (CEDE)

For example: 5000 net cpm on the cartridge would roughly equal: 100 DAC Iodine, 2500 mREM/hr CDE and 75 mREM/hr CEDE.

NOTE

1. This information is intended for field team use only and not for making dose projections for the public.
2. The relationships shown above are valid only if the sampler run times specified in the sampling instructions are followed.
3. The relationships are based on conservative assumptions (e.g. all iodine is I¹³¹) and will in most cases overestimate the field team's dose. More refined estimates can be obtained from the RAC or EACC.

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Important Telephone Numbers

	<u>Location/Position</u>		<u>Phone Number</u>
Control Room -	RAC		948-8525
	RAC		944-0382
OPS Support Center -	RCC/GRCS	Cellular	948-8248 ext. 5444
			948-8672
			948-8833
Processing Center -	Security		948-8038
Warehouse 1 -	Assembly Area		948-8248 ext. 5500
Warehouse 2 -	Assembly Area		948-8248 ext. 5042
EACC -	EAC/Met-Dose Coordinator		540-4501
EOF -	Group Leader R&EC		657-2097
Simulator (Drills Only) -	RAC		948-2063

EXHIBIT 9
Field Team Thyroid Blocking Agent Administration Form

Instructions:

1. Fill in the information below:

Field Team Member's Name:

Last _____ First _____ Middle Initial _____

Social Security Number: _____ - _____ - _____

Badge Number: _____

Estimated Thyroid Dose (CDE): _____ REM

Name of the RAC/EACC who authorized use of thyroid blocking agent:

Date and time of authorization: _____

Read the Thyroid Blocking Agent Precautions (Page 2 of this exhibit).

3. Decide if you should and are willing to take Thyroid Blocking Agent.
4. Record your decision below and sign/date this form.

NOTE

Although 10 CFR 20 allows up to 50 REM per year, EPA and FDA guidance recommend considering the use of thyroid blocking agent (KI) for acute exposures of 25 REM or greater (CDE) to the adult thyroid in order to maintain exposures As Low As Reasonably Achievable (ALARA).

I verify that I have read and understand the information on the Thyroid Blocking Agent Precautions sheet and understand that taking thyroid blocking agent is voluntary.

I also verify that I have no / have a (circle one) known allergy to iodine. If you have a known allergy to iodine you should not take thyroid blocking agent.

I accept / refuse (circle one) thyroid blocking agent.

Signature of Team Member

Date

5. If you have decided to accept thyroid blocking agent:

- Obtain thyroid blocking agent and drinking water from the field monitoring kit.
- Take the initial dose of one (1) tablet.
- Notify the RAC/EACC of this action.

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EXHIBIT 9

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HOW POTASSIUM IODIDE WORKS

Certain forms of iodine help your thyroid gland work right. Most people get the iodine they need from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

If you take potassium iodide, it will fill-up your thyroid gland with non-radioactive iodine. This reduces the chance that radioactive iodine will enter the thyroid gland.

WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or anti-thyroid drug). Pregnant and nursing women and babies and children may also take this drug.

HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium Iodide should be taken as soon as possible after proper authorization is received. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amounts of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than 10 days. Contact company medical personnel to determine how long you should take potassium iodine.

SIDE EFFECTS

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low drug dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people could have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body at times severe shortness of breath requiring immediate medical attention.

Taking iodide may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide and contact the medical department.

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Field Team Radio Operating Guidelines

NOTE

The following sections provide guidance for operation of the field team portable radios. Individual sections can be implemented as needed.

To operate the portable radio:

- A. Turn on the portable radio by rotating the "power on-off/volume" knob clockwise. The radio will perform a "power up self test" and then display:
 - Its unit number (e.g., "TMI P 1" is portable radio #1) and
 - Either "EARS" or "CC SCAN" depending on whether the radio is receiving the system Control Channel signal (i.e., if "CC SCAN" appears, the radio is out of range or in a bad location).

- B. To transmit:
 - Make sure that "EARS" is displayed on the front of the radio and then press the Push-To-Talk (PTT) button (elongated button on the left side of the radio).
 - When the short medium pitch beep is heard, begin speaking.
 - If a high pitch beep is heard when the PTT is pressed, the system is temporarily busy. Don't release the PTT button - continue pressing it and wait for the short medium pitch peep before starting to speak. The delay should typically be not more than a few seconds.
 - When speaking, hold the radio approximately 3 inches from the mouth and speak in a normal voice.

- C. Receiving:
 - When a call is being received the calling station's identity is displayed in the upper line of the radio's display.

D. System status beeps:

- The radio will indicate system status by emitting any of several beeps:
 - A short medium pitch beep indicates that the radio has begun to transmit and the user may begin speaking.
 - A high pitch beep indicates that all system channels are busy and the radio is waiting for the next available channel. The user should continue pressing the PTT button until a short medium pitch beep is heard and then begin speaking.
 - If five short high pitch beeps are heard while transmitting, this indicates that the radio is approaching its 60 second transmission length limit. Unless the radio is un-keyed before the long low pitch beep is heard, the radio will stop transmitting and information will be missed. Long transmissions should be broken into several shorter transmissions to avoid this.
 - A low pitch beep simultaneous with the appearance of a battery icon in the lower right corner of the display indicates that the battery voltage is low and the battery should be changed.

E. To replace the battery pack:

- Turn the radio off.
- Depress the recessed button beside the belt clip on the rear of the radio and slide the battery toward the bottom of the radio.
- Lift the battery up and away from the radio.
- To install a fresh battery pack: Align the tabs on the battery with the slots on the radio and slide the battery pack toward the top of the radio until it clicks.

F. The channel selector knob and the buttons on the front panel of the radio serve no function and should not be manipulated.

FOR INFORMATION ONLY

AmerGen

TMI - Unit 1
Emergency Plan
Implementing Document

Number

EPIP-TMI-.27

Title

Revision No.

Emergency Operations Facility

18

Applicability/Scope

USAGE LEVEL

Effective Date

TMI Division

1

DEC 8 2000

This document is within QA plan scope

<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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Safety Reviews Required

<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
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	Signature	Date
Procedure Owner	/s/ N. Brown	12/05/00
Approver	/s/ N. Brown	12/05/00

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1.0 **PURPOSE**

Provide guidelines for activation and operation of the Emergency Operations Facility (EOF).

2.0 **APPLICABILITY/SCOPE**

This procedure shall apply to all TMI personnel assigned to the EOF during a Site Area Emergency, General Emergency or when EOF activation is required by the Emergency Director.

3.0 **DEFINITIONS**

None

4.0 **RESPONSIBILITIES**

- a. Emergency Support Director - Exhibit 1, 2, 3, 4, 5, 8 and 14
- b. EOF Communications Coordinator - Exhibit 23 and 24
- c. Technical Support Representative - Exhibit 15 and 15A
- d. Group Leader R & EC - Exhibit 17
- e. Group Leader Adm. Support - Exhibit 6, 7, 7A, 20, 21 and 22
- f. Public Information Rep. - Exhibit 12, 13 and 14
- g. Environmental Assessment Coord. - Exhibit 18
 - Met/Dose Coordinator - Exhibit 18A and 18B
- h. Emergency Support Director Asst. - Exhibit 10
- i. Emergency Preparedness Rep. - Exhibit 9 and 9A

5.0 **PROCEDURE**

- a. Personnel shall perform actions as specified in the appropriate exhibits as applicable for the level and severity of the emergency.
- b. Personnel shall respond to specific requests from the Emergency Response Organization management (e.g., ESD, Group Leaders, Coordinators)

6.0 **REFERENCES**

- a. TMI Emergency Plan (AP 1092)
- b. TMI Emergency Plan Implementing Documents

7.0 **EXHIBITS**

- 7.1 Exhibit 1, Emergency Support Director Checklist
- 7.2 Exhibit 2, Emergency Report Form – TMI
- 7.3 Exhibit 3, EAL descriptions for the Emergency Report Form
- 7.4 Exhibit 4, Emergency Director/Emergency Support Director Turnover Checklist
- 7.5 Exhibit 5, Emergency Support Director Emergency Briefing Sheet
- 7.6 Exhibit 6, EOF Access Control
- 7.7 Exhibit 7, TMI Access Authorization Checklist
 - 7.7.1 Exhibit 7A, TMI Access Authorization
- 7.8 Exhibit 8, PAR Logic Diagram
- 7.9 Exhibit 9, Emergency Preparedness Representative Checklist
 - 7.9.1 Exhibit 9A, Fitness For Duty instructions
- 7.10 Exhibit 10, Emergency Support Director Assistant Checklist
- 7.11 Exhibit 11, ESD Logkeeper Checklist
- 7.12 Exhibit 12, Public Information Representative - EOF Checklist
- 7.13 Exhibit 13, Press Release Guidance
- 7.14 Exhibit 14, Site Access For Media
- 7.15 Exhibit 15, Tech Support Representative Checklist
 - 7.15.1 Exhibit 15A, Plant Process Computer Access Instructions
- 7.16 Exhibit 16, TMI / NRC Emergency Response Interface Criteria
- 7.17 Exhibit 17, Group Leader Radiological & Environmental Controls Checklist
- 7.18 Exhibit 18, Environmental Assessment Coordinator Checklist
 - 7.18.1 Exhibit 18A, Met/Dose Coordinator Checklist
 - 7.18.2 Exhibit 18B, Field Team Data Collection
- 7.19 Exhibit 19, RAC Line Communicator Checklist
- 7.20 Exhibit 20, Group Leader Admin Support Checklist

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Emergency Operations Facility

- 7.21 Exhibit 21, Emergency Shift Schedule (Watch Bill)
- 7.22 Exhibit 22, EOF Setup for Monitoring and Decontamination
- 7.23 Exhibit 23, EOF Communications Coordinator Checklist
- 7.24 Exhibit 24, Offsite Notifications Checklist

EXHIBIT 1

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ESD Checklist

I. EOF ACTIVATION

NOTE

The ESD Assistant MAY assist in the completion of this checklist and Exhibit 4.

NOTE

The following steps are presented in the sequence that is most likely to result in efficient activation of the EOF. Steps may be performed out of sequence as the situation requires. Steps that are not applicable for the present situation may be skipped but should be reconsidered as the situation changes.

Initial

1.0 Activate the EOF

NOTE

The facility is considered activated when all portions of Step 1 are completed.

- a. Obtain a turnover from the Emergency Director (ED)
 - Use the Emergency Director's Line, or alternate means
 - Complete Exhibit 4 to document the turnover.
- b. Use the EOF intercom to brief personnel on plant conditions using Exhibit 5.
 - Include NRC and State representative(s), if available.
 - Include State Representative(s), if available.
- c. Verify from the EP Rep. that the EOF response positions have been manned within one hour of notification.
- d. After the above steps have been completed, assume ESD responsibilities by performing the following:
 - Inform the Emergency Director (ED) that you have assumed the position of ESD and will take over responsibility for the following:
 - a. Approving and directing information releases to the media.

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- b. Approving and, if possible, personally conveying appropriate Protective Action Recommendations to the Senior Official in the State EOC (Emergency Operations Center).
- c. Brief the NRC Site Team Leader and serve as the official point of contact for TMI for receiving NRC directives. This includes interfacing with the NRC regarding deviations from license conditions or technical specifications (10 CFR 50.54).

NOTE

The ED will advise the ESD when such deviations are being planned and the technical organization will be used to the fullest extent possible.

- If the ED decides to transfer responsibility for "Approving and directing official notifications to offsite agencies", perform the following
 - a. Log the decision in the ESD log
 - b. Direct the EOF Communications Coordinator to obtain a turnover from the communicator making notifications in the ECC.
- Announce on the intercom that the EOF is operational

II. EOF OPERATION

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps may be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- a. Personally, if possible, inform the Chief Nuclear Officer
 - Status of the EOF
 - Status of the Emergency
- b. The ESD is responsible for authorizing personnel to work in site facilities (EOF, EACC, JIC) during an emergency if they are not Fit for Duty (FFD).
 - Fitness for Duty criteria are stated in Exhibit 9A.
- c. **ESD Conferences**
 - ESD conferences are periodically (Typically once per hour or as conditions change) held for information exchange
 - a. The ESD Assistant is in charge of EOF activities during the ESD conference.
 - b. The ESD Assistant will interrupt the conference if a major plant change occurs.
 - ESD conference attendance should include the following:
 - a. State Representatives
 - BRP
 - PEMA
 - b. NRC
 - Site Team Leader
 - Director Site Operations
 - c. Group Leader R & EC

EXHIBIT 1

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- d. Technical Support Representative
- e. Public Information Representative - EOF
- f. Group Leader Admin Support
- g. Emergency Preparedness Representative
- Suggested structure for the first conference
 - a. Get information from the lead personnel
 - Obtain input from State Representative(s)
 - Obtain input from NRC
 - b. Summarize the status
 - c. Discuss the prognosis of where the plant is heading
 - d. Discuss mitigating activities underway, planned or needed
 - e. Discuss what can go wrong and the consequences
 - f. Potential PAR if General Emergency is declared.
 - g. This conference constitutes the briefing of the State Representative
- Conference Action Items
 - a. Action Items shall be logged
 - b. Action Items shall be tracked
 - c. Action items are to be discussed at subsequent conferences until they are resolved.

EOF Briefings

- a. EOF briefings are accomplished using the EOF intercom.
 - Use Exhibit 5 to enhance briefing

EXHIBIT 1

ESD Press Release

- a. Press Releases SHOULD be issued within one (1) hour from the time a plant event has occurred; therefore a TIMELY review is required.
 - The ESD must approve Press Releases that are not boilerplate
 - a. The Press Release Guidance (Exhibit 13) should be followed.
 - b. The Group Leader R & EC SHALL review and concur with the Press Release, before ESD approval.
 - c. The Technical Support Representative SHALL review and concur with the Press Release, before ESD approval.
 - d. The Security Coordinator SHALL review and concur with any Press Release containing SAFEGURADS INFORMATION, before ESD approval.

NOTE

- 1. Information Releases (e.g., Media Advisories, Emergency Reclassifications) which merely provide standard non-technical information need not have ED/ESD approval
- 2. DO NOT include the PAR in a Press Release.

- b. If MEDIA access to the site is required, refer to Exhibit 14, "Site Access Policy for Media during Emergencies."

Onsite Protective Actions

- a. Determine the status of site accountability from the Group Leader Admin Support
 - Emergency Director (ED) can supply this information if the Group Leader Admin position is not staffed.
- b. Determine if site evacuation has been ordered.
 - Ensure provisions are made for providing site employees with instructions for reporting to work for the next business day.

EXHIBIT 1

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- c. If any, of the TMI Emergency Response Facilities are downwind of a radioactive release.
- Provide for their monitoring and protection
 - Evacuation orders, for the general public, do not apply to the RAA. This facility would be relocated, if needed, based on advice from the Group Leader R&EC.

Changes to Emergency Classifications

- a. Review EPIP-TMI-.01 to determine when a change in emergency classification is warranted.
- Discuss the change in Emergency Classification with the Emergency Director.
- b. If the "Approving and directing off-site notification to off-site agencies" responsibility has been transferred to the ESD, then proceed with this section, if NOT, go to step 7.0

NOTE

The ESD may overrule the ED and direct that the ED declare a higher level of emergency.

- Immediately complete an Emergency Report Form.

NOTE

- a. The form may be completed by an ESD Assistant or EP Rep.
- b. Notifications SHOULD be started within 5 minutes of an event declaration (i.e., General Emergency) and SHALL be made within 15 minutes of the declaration.

- a. Complete page 1 and 2 of the Emergency Report Form-TMI
(Refer to Exhibit 2, for a sample of the form).
- b. Use Exhibit 3 for the EAL and Event description
- The Event description must contain the following information from Exhibit 3.
 - a. EAL number
 - b. EAL title
 - c. Additionally, include information about the plant status (e.g., Power Operations, Hot Shutdown, etc.).

EXHIBIT 1

- Approve the Emergency Notification
- Direct the EOF Communications Coordinator to initiate off-site agency notification using the completed Page 1 of the Emergency Report Form-TMI.
- Inform the Emergency Director to make the appropriate plant page announcement.
- Inform the State Representative(s)
 - a. Level of Emergency Declared
 - b. Basis for the declaration

Offsite Protective Action Recommendations (PAR)

a. At the **SITE AREA EMERGENCY**

- Convene an ESD conference
 - a. Refer to step 2.3 of this exhibit
- Determine what could lead to a General Emergency by reviewing the EALs in EPIP-TMI-.01
- Review the PAR Logic Diagram (Exhibit 8) and determine the most likely PAR, in preparation for a GENERAL EMERGENCY declaration
- Discuss the PAR with the following:
 - a. PEMA representative at the EOF
 - b. BRP representative at the EOF
 - c. NRC representative at the EOF
 - d. Emergency Director

b. At the **GENERAL EMERGENCY**

- If you have assumed the "Approving and directing official notifications to off-site agencies" then complete Step 6.0.

EXHIBIT 1

- Immediately convene an ESD conference to agree upon a PAR
 - a. If a likely PAR was developed earlier, quickly verify that it is still appropriate
 - b. If a likely PAR was NOT developed earlier, determine the PAR from Exhibit 8
 - c. Present the developed PAR to the following:
 - PEMA representative at the EOF
 - BRP representative at the EOF
(This fulfils the obligation to notify the BRP)
 - NRC representative at the EOF

NOTE

ESD SHALL communicate the PAR developed by the TMI emergency organization whether or not PEMA, BRP or NRC representatives at the EOF agree with the developed PAR.

NOTE

To the maximum extent possible, obtain agreement from the State and NRC on the PAR Whether or not the State and NRC agree SHALL NOT impact communication of the PAR recommendation.

- Personally provide TMI's PAR to the SENIOR OFFICAL at the STATE EOC (Emergency Operations Center) within 15 minutes of the General Emergency declaration by one of the following methods:

NOTE

Verify that you are speaking to the SENIOR OFFICAL at the State EOC when providing the PAR.

- a. Pennsylvania Governor (717) 651-2148
- b. State EOC (717) 651-2011
- c. PEMA Notification Line (DLM-6), PEMA, Dial 37

NOTE

If the ESD cannot make the call personally, he may designate someone else to convey the PAR.

- Briefly inform the ED of the PAR decision, do not delay the PAR notification process.
- Inform the ED of the Protective Actions implemented by the State.

EXHIBIT 1

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NRC Interface

a. Review Exhibit 16, "TMI / NRC Emergency Response Interface".

- Ask the Senior NRC person who is the Site Team Leader and who is the Director Site Operations.

NOTE

ONLY the Director Site Operations is empowered to issue directives.

- Verify that the EP Representative has briefed the NRC on the following:
 - a. Status of the event
 - b. Structure of the TMI organization
 - c. Any NRC directives are to be in writing to the ESD or in the absence of the ESD the ED.
- Verify that the EP Representative has introduced TMI personnel to their NRC counterparts in the EOF.

Long-Term Recovery

a. Discuss implementation of EPIP-TMI-.45, Classified Emergency Termination/Recovery

- At an ESD conference
- With the ED

NOTE

If a GENERAL EMERGENCY is in effect, DO NOT de-escalate to a lower level of emergency. The only option is to go into Long-Term Recovery and this transition SHALL NOT occur until ALL Offsite protective measures have been completed and the State has been notified.

Close Out / Deactivation

a. Upon any of the following conditions:

- Emergency Close Out
- Deactivation of the EOF
- Deactivation of the EACC

i. An inventory of the EOF is required to be performed by the end of the working day following the end of the event. The inventory is the responsibility of the Emergency Preparedness Manager, TMI. Notify the Emergency Preparedness Manager of the need to perform the inventory in accordance with TEP-ADM-1300.01, Maintaining Emergency Preparedness.

ii. An inventory of the EACC is required to be performed by the end of the working day following the end of the event. The inventory is the responsibility of the Environmental Radioactivity Laboratory Manager. Notify the Environmental Radioactivity Laboratory Manager of the need to perform the inventory in accordance with TEP-ADM-1300.01, Maintaining Emergency Preparedness.

NAME _____ TIME _____ hours DATE _____
Emergency Support Director

EXHIBIT 2

AmerGen <small>A PECC Energy Services Company</small>	EMERGENCY REPORT FORM - TMI <small>(Press Firmly and Write Clearly)</small>	Part 1 of 4 Call Out/Notification
CALL OUT		
(Select one) <input type="checkbox"/> LEVEL 1 Onshift (Required for Unusual Event) <input type="checkbox"/> LEVEL 2 Initial Response Emergency Organization & Onshift (Required for Alert) <input type="checkbox"/> LEVEL 3 Emergency Support Organization & Initial Response Emergency Organization & Onshift (Required for SAE & GE)		
Start Here for Notifications Read message - slowly - clearly.		
(Select) <input type="checkbox"/> This is a drill. This is a drill. <input type="checkbox"/> This is NOT a drill. This is NOT a drill.		
Completed by Communicator This is _____ at TMI, my phone number is (Select) 944 _____ <small style="margin-left: 100px;">Name 948 Extension</small>		
EMERGENCY CLASSIFICATION		
(Select One) <input type="checkbox"/> An Unusual Event has been declared <input type="checkbox"/> A Site Area Emergency has been declared <input type="checkbox"/> An Alert has been declared <input type="checkbox"/> A General Emergency has been declared <input type="checkbox"/> The event has been terminated		
at _____ hours on _____ <small style="margin-left: 100px;">Emergency Classification Time (24 hour clock) Emergency Classification Date</small>		
(Select) This represents: <input type="checkbox"/> An initial Classification Status <input type="checkbox"/> An escalation in Classification Status <input type="checkbox"/> No change in Classification Status <input type="checkbox"/> A reduction in Classification Status		
EVENT DESCRIPTION <small>(Enter EAL number, EAL title and plant status)</small>		
There is: <input type="checkbox"/> No abnormal radioactive <input type="checkbox"/> An abnormal radioactive airborne <input type="checkbox"/> An abnormal radioactive liquid release to the environment as a result of this emergency.		
MUSTER/EVACUATION		
ONLY if the initial event classification is a GENERAL EMERGENCY Have TRANSMIT the Protective Action Recommendation (PAR) to the risk counties PROTECTIVE ACTION RECOMMENDATION		
(Select One) <input type="checkbox"/> EVACUATE the 5 mile radius around the plant and SHELTER the 5 to 10 mile radius around the plant <input type="checkbox"/> SHELTER the 10 mile radius around the plant <small>(Use SHELTER ONLY option when it is clear that EVACUATION is NOT appropriate)</small>		
METEOROLOGICAL CONDITIONS		
Wind direction is from _____ and the wind speed is _____ miles per hour.		
(Select) <input type="checkbox"/> This is a drill. This is a drill. <input type="checkbox"/> This is NOT a drill. This is NOT a drill.		
Approved - ED/ESD		

Distribution: Green - Call Out/Notification; Yellow - Contact; White - ED copy; Pink - Plant Page

AG0139 (12-99)

EXHIBIT 2

 <small>AMERGEN Energy Services</small>	EMERGENCY REPORT FORM - TMI	Part 2 of 4 Contact
CALL OUT		
Info: <input type="checkbox"/> LEVEL 1 Onshift only: <input type="checkbox"/> LEVEL 2 Initial Response Emergency Organization & Onshift <input type="checkbox"/> LEVEL 3 Emergency Support Organization & Initial Response Emergency Organization & Onshift		
Start Here for Contact Read Message - slowly - clearly. <input type="checkbox"/> This is a drill. This is a drill. <input type="checkbox"/> This is NOT a drill. This is NOT a drill.		
EMERGENCY CLASSIFICATION		
<input type="checkbox"/> An Unusual Event has been declared <input type="checkbox"/> A Site Area Emergency has been declared <input type="checkbox"/> An Alert has been declared <input type="checkbox"/> A General Emergency has been declared <input type="checkbox"/> The event has been terminated		
at _____ hours on _____ <i>Emergency Classification Time</i> <i>Emergency Classification Date</i>		
This represents: <input type="checkbox"/> An initial Classification Status <input type="checkbox"/> An escalation in Classification Status <input type="checkbox"/> No change in Classification Status <input type="checkbox"/> A reduction in Classification Status		
EVENT DESCRIPTION		
There is: <input type="checkbox"/> No abnormal radioactive <input type="checkbox"/> An abnormal radioactive airborne <input type="checkbox"/> An abnormal radioactive liquid release to the environment as a result of this emergency.		
<input type="checkbox"/> This is a drill. This is a drill. <input type="checkbox"/> This is NOT a drill. This is NOT a drill.		
Approved - ED/ESD _____		

Distribution: Green - Call Out/Notification; Yellow - Contact; White - ED copy; Pink - Plant Page AG0139 (12-88)

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
U1.1	Radiological Effluent Limits Are Being Exceeded	<i>An Unusual event is declared because an abnormal release of radiation from the power plant has or will exceed 60 minutes and could lead to very low level radiation dose rates at or beyond the outer boundary of the plant site.</i>
U1.2	Unexpected Radiation Readings Inside the Power Plant	<i>An Unusual Event is declared because of abnormally high radiation levels measured inside the power plant that indicates a degradation in the control of radioactive material. No abnormal releases to the environment are occurring.</i>
U1.3	Liquid Radioactive Release That Exceeds Limits	<i>An Unusual Event is declared because a release of radioactive liquid that exceeds the limits of government regulations has lasted for 60 minutes or more. This event indicates a degradation in the ability to control the release of radioactive materials to the river.</i>
U1.4	Low Spent Fuel Pool Level	<i>An Unusual Event is declared because of the uncontrolled leakage of water from the Spent Fuel Pool. The leakage exceeds or is expected to exceed the ability to refill the pool. No abnormal releases of radioactivity to the environment are occurring.</i>
U1.5	Low Fuel Transfer Canal Level	<i>An Unusual Event is declared because of the uncontrolled leakage of water from the Fuel Transfer Canal. The leakage exceeds or is expected to exceed the ability to refill the canal. No abnormal releases of radioactivity to the environment are occurring.</i>
U1.6	Fuel Clad Damage With Increased Radiation	<i>An Unusual Event is declared because of indications that there has been damage to the metal tubes that hold the nuclear fuel pellets. Increased radiation has been detected in the water that flows through the nuclear reactor. No abnormal releases of radioactivity to the environment are occurring.</i>
U2.1	Potential Loss or Loss of Containment	<i>An Unusual Event is declared because of the: Potential Loss of Containment as a Fission Product Barrier. - OR - Loss of Containment as a Fission Product Barrier.</i>
U2.2	Reactor Coolant System or Steam Generator Leakage	<i>An Unusual Event is declared because of: an unidentified leak (location unknown) greater than or equal to 10 gallons a minute from the Reactor Coolant System. - OR - an unidentified leak (location unknown) greater than or equal to 10 gallons a minute from the Steam Generator tubes. - OR - an identified leak (location known) greater than or equal to 25 gallons a minute from the Reactor Coolant System.</i>
U3.1	A Risk of Station Blackout Exists - Backup Power Is Available.	<i>An Unusual Event is declared because of the loss of all normal electrical power sources for to the power plant for more than fifteen minutes. Emergency backup power is available.</i>
U3.3	Loss of "A" or "B" Plant DC Electricity For More than 15 Minutes during Cold Shutdown or Refueling Shutdown.	<i>An Unusual Event is declared because of the loss of ALL of the DC (Direct Current) electrical power supply for more than fifteen minutes.</i>

Enter the EAL number AND the Brief Title (This is the bold information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
U4.1	Unplanned Loss of Control Room Safety Indicators	<i>An Unusual Event is declared because of the unplanned loss of the majority of the control room's Safety Related Equipment alarms - or - indications. Although other non-alarming indications are available to the Control Room Operators, this situation requires increased surveillance of the safety related equipment and there is the risk that a degraded plant condition could go undetected.</i>
U4.1.1	Unplanned Loss of Onsite or Offsite Communications.	<i>An Unusual Event is declared because of the unplanned loss of all onsite communications capabilities. - OR - all offsite communications capabilities.</i>
U4.2	Failure to Complete a Plant Shutdown or Cooldown Within the Required Time Limit.	<i>An Unusual Event is declared because the required time limit to perform a plant shutdown - OR - a plant cooldown was exceeded. The Technical Specifications are the power plant's operational guidelines. A Limiting Condition for Operation (LCO) sets a specific time limit that allows continued plant operation while actions are being taken to correct the problem. If the problem cannot be corrected and the plant cannot be shut down or cooled down within the time limit, an Unusual Event must be declared.</i>
U5.1	High River Water Level.	<i>An Unusual Event is declared because flood waters are within a few feet of the top of the stone dike that surrounds the power plant. Water is NOT flooding onto the plant site.</i>
U5.2	High Wind Speeds Near Hurricane Force	<i>An Unusual Event is declared because of Sustained Winds greater than 70 mph recorded at TMI. These winds have the potential to damage Plant Equipment.</i>
U5.3	Tornado Strikes Protected Area.	<i>An Unusual Event is declared because of a report that a tornado touched down inside the Protected Area of the power plant. There is the potential for damage to structures and equipment inside the Protected Area.</i>
U5.4	Earthquake At Threshold Levels.	<i>An Unusual Event is declared because of a minor earthquake detected at the power plant. An earthquake of this magnitude has the potential to damage some equipment, but it is not expected to affect any safety systems. The occurrence of any detectable earthquake warrants increased monitoring by the operators.</i>
U6.1	Fire In The Protected Area.	<i>An Unusual Event is declared because of a fire in the Protected Area of the power plant that our site Fire Brigade could not bring under control within 15 minutes of when the fire was confirmed. This fire has the potential to involve Safety Related Equipment if it spreads.</i>
U6.3	Flammable / Toxic Gas That May Affect Operation.	<i>An Unusual Event is declared because of the detection of flammable / toxic gas that could enter the power plant site. This gas could affect the safety and health of plant personnel and disrupt normal operation of the power plant.</i>

Enter the EAL number AND the Brief Title (This is the bold information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

U6.4	Unexpected Explosion In The Protected Area.	<i>An Unusual Event is declared because of an unexpected explosion that caused damage inside the Protected Area of the power plant. This explosion was NOT caused by a bomb. The damage could affect the operation of the plant.</i>
U6.5	Steam Turbine Damage.	<i>An Unusual Event is declared because of damage to the steam turbine, including puncturing of the steel casing around the turbine or damage to the generator seals. The hazard of projectiles from the turbine and puncturing of the casing around it decreases the safety level of the plant and could affect the safety and health of plant personnel which affects the operation of the power plant.</i>
U6.6	Vehicle Crash In The Protected Area.	<i>An Unusual Event is declared because of a vehicle (airplane, train, helicopter, etc.) that accidentally crashed inside the Protected Area of the power plant. There is the potential for damage to structures and equipment inside the Protected Area.</i>
U7.1	Confirmed Security Event.	<i>An Unusual Event is declared because of a confirmed security event, which could potentially degrade the safety level of the power plant. (This event involves: A bomb discovered inside the Protected Area The Protected Area includes major plant structures like the turbine and service buildings that are protected by a security fence and to which access is controlled.) - OR - A Hostile Force inside the Owner Controlled Area (The Owner Controlled Area includes the area between the perimeter chain link fence and the Protected Area).</i>
U8.1	Judgment of the Shift Manager / Emergency Director - Potential Degradation of Plant Safety	<i>An Unusual Event is declared by the Shift Manager / Emergency Director. The Shift Manager / Emergency Director has the flexibility to declare an event if conditions exist that indicate a potential decrease in the safety level of the plant. These conditions may not be specifically addressed in an emergency procedure. In this situation, the decision to declare an emergency relies on the judgment of the Shift Manager / Emergency Director.</i>

Enter the EAL number AND the Brief Title (This is the **bold** information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
A1.1	Radiological Effluent Limits Are Being Significantly Exceeded.	<i>An Alert is declared because an abnormal release of radiation from the power plant has or will exceed 15 minutes and could lead to low level radiation dose rate at or beyond the outer fence line of the plant site.</i>
A1.2	Unexpected Radiation Readings Inside the Power Plant that Affect the Safe Operation of the Plant.	<i>An Alert is declared because of abnormally high radiation levels measured inside the power plant, which indicate a serious degradation in the control of radioactive material.</i>
A1.3	Liquid Radioactive Release That Significantly Exceeds Limits.	<i>An Alert is declared because a release of radioactive liquid that significantly exceeds the limits of government regulations has lasted for 15 minutes or more.</i>
A1.4	Low Spent Fuel Pool Level With Increased Radiation Levels.	<i>An Alert is declared because of the uncontrolled leakage of water from the Spent Fuel Pool with higher than normal radiation levels in the spent fuel pool area of the plant. This condition indicates a serious degradation in the control of radioactive material.</i>
A1.5	Low Fuel Transfer Canal Level With Increased Radiation Levels.	<i>An Alert is declared because of the uncontrolled leakage of water from the Fuel Transfer Canal with higher than normal radiation levels in the reactor building. This condition indicates a serious degradation in the control of radioactive material.</i>
A2.1	Potential Loss or Loss of the Fuel Clad - OR - the Reactor Coolant System.	<i>An Alert is declared because ONE Fission Product Barrier (other than Containment) has been impacted due to the: Potential Loss of the Fuel Clad Fission Product Barrier - OR - the Reactor Coolant System Fission Product Barrier. - OR - Loss of the Fuel Clad Fission Product Barrier - OR - the Reactor Coolant System Fission Product Barrier.</i>
A3.1	A Risk of Station Blackout Exists - Limited Backup Power Is Available.	<i>An Alert is declared because of the loss of all normal electrical power sources for the power plant for more than fifteen minutes. Only one of several sources of emergency electrical power sources is available.</i>
A3.2	Prolonged Station Blackout - Greater than 15 minutes - During Cold Shutdown or Refueling Shutdown.	<i>An Alert is declared because of the loss of all normal electrical power sources - AND - the loss of all emergency electrical power sources for more than fifteen minutes (a prolonged Station Blackout) during Cold Shutdown or a Refueling Shutdown.</i>
A4.1	Unplanned Loss of Control Room Safety Indicators With Transient	<i>An Alert is declared because of the unplanned loss of the majority of the control room's Safety Related Equipment alarms - or - indications. - AND - The loss of other non-alarming indications. - OR - A significant change in the power plant's status is in progress. This situation requires increased surveillance of the safety related equipment in order to safely operate the power plant and there is the risk that a degraded plant condition could go undetected.</i>

Enter the EAL number AND the Brief Title (This is the **bold** information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
A4.2	Failure of the Reactor to Automatically Shutdown - AND - a Successful Manual Reactor Shutdown was Accomplished.	<i>An Alert is declared because the Reactor Protection System that is designed to automatically shut down (trip) the reactor failed to do so. The Control Room Operators have manually shut down (tripped) the reactor, but the failure of the automatic system degrades the safety level of the power plant.</i>
A4.3	Loss of All Means of Decay Heat Removal and the Nuclear fuel is Predicted to be Uncovered.	<i>An Alert is declared because the operators are unable to provide sufficient cooling water to the reactor following a plant shutdown. This condition reduces the ability of the operators to keep the nuclear fuel cool and degrades the safety level of the power plant.</i>
A5.1	High River Water Level Near Flood Level.	<i>An Alert is declared because of flood waters that have the potential to flow over the top of the stone dike that surrounds the power plant. Portions of the plant site may be flooded. This flood has the potential to damage Safety Related Equipment.</i>
A5.2	High Wind Speeds Greater Than Hurricane Force.	<i>An Alert is declared because of Sustained Winds greater than 80 mph recorded at TMI. There is the potential for damage to Safety Related Equipment.</i>
A5.3	Tornado Strikes Vital Area.	<i>An Alert is declared because of a report that a tornado touched down and has damaged structures and equipment inside the Vital Area of the power plant. This damage could affect Safety Related Equipment.</i>
A5.4	Earthquake At Operating Design.	<i>An Alert is declared because of an earthquake at the power plant. An earthquake of this magnitude has the potential to damage some Safety Related Equipment that could affect the ability to protect the public's health and safety. The power plant may be shut down and increased monitoring will be performed by the operators.</i>
A6.1	Fire Affecting Safety Related Equipment.	<i>An Alert is declared because of a fire that has affected one of the Safety Related Equipment systems in the Vital Area. (The Vital Area includes structures where safety related equipment is located.) - OR - A fire is in the Protected Area and requires local fire company assistance. The Protected Area includes major plant structures like the turbine and service buildings that are protected by a security fence and to which access is controlled.</i>
A6.2	Control Room Evacuation Initiated.	<i>An Alert is declared because of the order to evacuate the Control Room. The absence of personnel in the control room can affect the safe operation of the power plant.</i>
A6.3	Flammable / Toxic Gas Affects Plant Operation.	<i>An Alert is declared because of life threatening concentrations of flammable / toxic gas within the Vital Area of the power plant. This presence can affect the safety of plant personnel and the operation of Safety Related Equipment. Evacuation of plant personnel is possible.</i>

Enter the EAL number AND the Brief Title (This is the bold information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
A6.4	Unexpected Explosion In The Vital Area.	<i>An Alert is declared because of an unexpected explosion that caused damage inside the Vital Area of the power plant. This explosion was NOT caused by a bomb. The damage could potentially affect the ability to protect the public's health and safety.</i>
A6.6	Vehicle Crash In The Vital Area.	<i>An Alert is declared because of a vehicle (airplane, train, helicopter, etc.) that accidentally crashed inside the Vital Area of the power plant. The damage could affect Safety Related Equipment.</i>
A7.1	Confirmed Security Event Potentially Affecting Safety Related Equipment.	<i>An Alert is declared because of a confirmed security event, which degrades the safety level of the power plant. This event involves: A bomb discovered inside the Vital Area. The Vital Area includes buildings where Safety Related Equipment is located. Damage to this equipment would reduce the ability to protect the public's health and safety. - OR - A Hostile Force inside the Protected Area. The Protected Area includes major plant structures like the turbine and service buildings that are protected by a security fence and to which access is controlled.</i>
A8.1	Judgment of the Shift Manager / Emergency Director – Actual Degradation of Plant Safety.	<i>An Alert is declared by the Shift Manager / Emergency Director. The Shift Manager / Emergency Director has the flexibility to declare an event if conditions exist that indicate a potential substantial decrease in the safety level of the plant. These conditions may not be specifically addressed in an emergency procedure. In this situation, the decision to declare an emergency relies on the judgment of the Shift Manager / Emergency Director.</i>

Enter the EAL number AND the Brief Title (This is the bold information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
S1.1	High Radiological Doses at the Boundary of the Power Plant	<i>A Site Area Emergency is declared because an abnormal release of radiation from the power plant could lead to significant doses of radiation at the boundary of the power plant.</i>
S2.1	Potential Loss or Loss of the Fuel Clad - AND - Potential Loss or Loss of the Reactor Coolant System	<i>A Site Area Emergency is declared because TWO of the Fission Product Barriers have been impacted due to the: Loss of the Fuel Clad Fission Product Barrier - AND - the Potential Loss of the Reactor Coolant System Fission Product Barrier. - OR - Potential Loss of the Fuel Clad Fission Product Barrier - AND - the Potential Loss of the Reactor Coolant System Fission Product Barrier. - OR - Potential Loss of the Fuel Clad Fission Product Barrier - OR - the Potential Loss of the Reactor Coolant System Fission Product Barrier - AND - the Loss of Any Other Fission Product Barrier.</i>
S3.1	Prolonged Station Blackout - Greater than 15 Minutes.	<i>A Site Area Emergency is declared because of the loss of all normal electrical power sources for the power plant for more than fifteen minutes - AND - the loss of all emergency electrical power sources for more than fifteen minutes. This is called a Station Blackout.</i>
S3.3	- Loss of All Plant DC Electricity For More than 15 Minutes when the plant is not in Cold Shutdown or Refueling Shutdown.	<i>A Site Area Emergency is declared because of the loss of all DC (Direct Current) electrical power for more than fifteen minutes.</i>
S4.1	Unplanned Loss of All Control Room Safety Indicators With Transient	<i>A Site Area Emergency is declared because of the unplanned loss of all Safety Related Equipment indications and alarms - AND - A significant change in the power plant's status is in progress. The control room staff is unable to adequately monitor the systems necessary to safely control the power plant and insure protection of the public's health and safety.</i>
S4.2	Failure of the Reactor to Automatically Shutdown - AND - a Manual Reactor Shutdown could not be Accomplished.	<i>A Site Area Emergency is declared because the Reactor Protection System that is designed to automatically shut down (trip) the reactor failed to do so AND the Control Room Operators were unable to manually shut down (manually trip) the reactor from the control room. This condition reduces the ability of the operators to control the power plant and creates conditions that could lead to damage of the nuclear fuel or the steel reactor vessel and associated piping. This condition impacts the ability to protect the health and safety of the public.</i>

Enter the EAL number AND the Brief Title (This is the bold information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
S4.3	Loss of All Means of Decay Heat Removal - AND - Indications that the Nuclear fuel is Uncovered.	<i>A Site Area Emergency is declared because the operators are unable to provide sufficient cooling water to the reactor following a plant shutdown – AND - the increased heat has caused the water in the reactor to boil and uncover the fuel. This condition reduces the ability of the operators to keep the nuclear fuel cool, degrades the safety level of the power plant and decreases the ability to protect the public's health and safety.</i>
S4.4	Loss of Both Methods Needed to Maintain the Nuclear Reactor in Hot Shut Down.	<i>A Site Area Emergency is declared because of the loss of the ability to cool the reactor after it is shut down. This condition reduces the ability of the operators to keep the nuclear fuel cool and degrades the safety level of the power plant and the ability to protect the public's health and safety.</i>
S6.2	Control Room Evacuation Completed Without Complete Plant Control	<i>A Site Area Emergency is declared because of the evacuation of the Control Room - AND - the inability to confirm effective cooling of the nuclear fuel within 15 minutes. The absence of personnel in the control room and the lack of effective cooling of the nuclear fuel can affect the operation of Safety Related Equipment and the ability to protect the public's health and safety.</i>
S7.1	Confirmed Security Event Affecting Safety Related Equipment.	<i>A Site Area Emergency is declared because of a confirmed security event that degrades the safety level of the power plant and the ability to protect the public's health and safety. This event involves: A bomb that has exploded inside the Vital Area. The Vital Area includes buildings where Safety Related Equipment is located. Damage to this equipment would reduce the ability to protect the public's health and safety. - OR - A Hostile Force inside the Vital Area.</i>
S8.1	Judgment of the Shift Manager / Emergency Director - Actual Failures of Safety Systems.	<i>A Site Area Emergency is declared by the Shift Manager / Emergency Director. The Shift Manager / Emergency Director has the flexibility to declare an event if conditions exist that indicate the likely or actual major failure of plant functions needed to protect the public's health and safety. These conditions may not be specifically addressed in an emergency procedure. In this situation, the decision to declare an emergency relies on the judgment of the Shift Manager / Emergency Director.</i>

Enter the EAL number AND the Brief Title (This is the bold information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 3

EAL	BRIEF TITLE	EVENT DESCRIPTION
G1.1	High Radiological Doses at the Boundary of the Power Plant that Exceed Protective Action Guideline (PAG) Limits.	<i>A General Emergency is declared because an abnormal release of radiation from the power plant that could lead to high doses of radiation at the boundary of the power plant. This condition may require that protective actions be implemented for members of the public living around Three Mile Island.</i>
G2.1	Loss of ANY TWO of the Fission Product Barriers - AND - the Potential Loss of the third.	<i>A General Emergency is declared because TWO of the Fission Product Barriers have been Lost and there is at least the Potential Loss of the third barrier.</i>
G3.1	Prolonged Station Blackout - Greater than 4 hours.	<i>A General Emergency is declared because of the loss of all normal electrical power sources for the power plant for more than four hours - AND - the loss of all emergency electrical power sources for more than four hours (a prolonged Station Blackout) - AND - the overheating of the nuclear fuel.</i>
G4.2	Failure of the Reactor to Automatically Shutdown - AND - a Manual Reactor Shutdown could not be Accomplished - AND - Operators are Unable to Cool the Nuclear fuel	<i>A General Emergency is declared, because the Reactor Protection System that is designed to automatically shut down (trip) the reactor failed to do so AND, the Control Room Operators were unable to manually shut down (manually trip) the reactor from the control room AND, the operators are unable to cool the nuclear fuel.</i>
G7.1	Confirmed Security Event Loss of Plant Control.	<i>A General Emergency is declared because of a confirmed security event that prevents the operators from being able to place the power plant in Cold Shutdown. This condition seriously degrades the safety level of the power plant and the ability to protect the public's health and safety. This event involves: The loss of physical control of the Control Room. - OR - The loss of physical control of the Remote Shutdown Control Area.</i>
G8.1	Judgment of the Shift Manager / Emergency Director - Safety System Failures and Potential Radioactive Release.	<i>A General Emergency is declared by the Shift Manager / Emergency Director. The Shift Manager / Emergency Director has the flexibility to declare an event if conditions exist that could result in substantial fuel damage and a substantial uncontrolled radiation release. - OR - have resulted in substantial fuel damage and a potential uncontrolled radiation release.</i>

Enter the EAL number AND the Brief Title (This is the **bold** information) in the Event Description area of the EMERGENCY REPORT FORM - TMI.

EXHIBIT 4

*** INFORMATION REGARDING PARs, NOT FOR PUBLIC RELEASE ***

PAR has been provided to the STATE

YES (✓)		NO (✓)		N/A (✓)	
---------	--	--------	--	---------	--

If YES, PAR RECOMMENDED

PROTECTIVE ACTION IMPLEMENTED BY THE STATE, IF KNOWN

PLANT STATUS

REACTOR STATUS

POWER OPERATION

- _____ % POWER STEADY STATE MANUAL SHUTDOWN @ _____ %/min
- HOT STANDBY HOT SHUTDOWN

SHUTDOWN

- REACTOR TRIP _____ AUTOMATIC _____ MANUAL

COOLDOWN

- COOLDOWN @ _____ °F/hr via
 - FORCED CIRC with _____ PUMPS NATURAL CIRC with _____ ΔT
 - Other (Explain) _____

COLD SHUTDOWN

- DHR 'A' DHR 'B' LPI 'A' LPI 'B'
- OTHER (Specify)

ELECTRICAL STATUS

- System GRID
- Main Generator
- Emergency Diesels 'A' 'B' SBO
- Battery 'A' 'B'
- OTHER (Specify)

EXHIBIT 4

FISSION PRODUCT BARRIER STATUS

REACTOR COOLANT SYSTEM

Barrier	INTACT (√)	POTENTIAL LOSS (√) /	Leak rate (gpm), If KNOWN	LOSS (√) /	Leak rate (gpm), If KNOWN
RCS (NOT OTSG)		/		/	
OTSG 'A'		/		/	
OTSG 'B'		/		/	

CONTAINMENT BUILDING

Barrier	INTACT (√)	POTENTIAL LOSS (√)	LOSS (√)
Building Integrity			
Bypass RB (e.g., OTSG leak to atmos.)			

FUEL CLAD INTEGRITY

Barrier	INTACT (√)	POTENTIAL LOSS (√)	LOSS (√)
Clad			

EMERGENCY SYSTEMS ACTUATED

- NONE
- EMERGENCY FEEDWATER (EFW)
- HIGH PRESSURE INJECTION (HPI)
- CORE FLOOD (CF)
- LOW PRESSURE INJECTION (LPI)
- REACTOR BUILDING SPRAY (BS)

PROBLEMS AT UNIT 2

OPEN TECHNICAL ISSUES (Provide specific details, including priority)

EXHIBIT 4

RADIOLOGICAL CONDITIONS

Is an abnormal, unplanned or uncontrolled release (monitored or unmonitored) in progress or suspected?

YES NO N/A

If YES, specify the release pathway:

If YES, describe release type:

Airborne release Liquid release Unknown
 Other (Specify)

Have Field Monitoring Teams (FMT) been dispatched? YES NO

Have abnormal ON SITE or OFF SITE radiological conditions been detected by:

Reuter Stokes Field Monitoring Team

Details:

Abnormal radiation levels IN PLANT: YES NO

Details (Location):

HAZMAT

A HAZARDOUS MATERIAL EVENT HAS OCCURRED (See 1203-44) YES NO

HAS ENVIRONMENT AFFAIRS BEEN INFORMED? YES NO

HAS THE HAZARDOUS MATERIAL ENTERED THE RIVER? YES NO

DETAILS (Location, Chemical, actions taken, etc.)

EXHIBIT 4

PERSONNEL STATUS

PERSONNEL INJURED YES HOW MANY _____ NO
INJURED & CONTAMINATED YES HOW MANY _____ NO
TRANSPORT OFFSITE YES HOW MANY _____ NO
SPECIFY THE OFFSITE FACILITY _____

PERSONNEL CONTAMINATED YES HOW MANY _____ NO
DETAILS:

IS ONSITE ACCOUNTABILITY REQUIRED? YES NO
IF YES, IS IT COMPLETE? YES NO
IS NON-ESSENTIAL PERSONNEL MUSTER REQUESTED? YES NO
IF YES, LOCATION; _____
HAVE NON-ESSENTIAL PERSONNEL BEEN EVACUATED? YES NO
IF YES, LOCATION; _____

OTHER ISSUES

DETAILS (Security, 10CFR50.54(x), etc.)

FORM COMPLETED BY _____ DATE _____ TIME _____
(NAME)

EXHIBIT 5

Emergency Support Director Briefing Sheet

NOTE

This checklist may be completed by the ESD Assistant or EP Representative.

NOTE

This checklist may be filled out in any sequence. Items that do not apply to the present situation may be skipped and marked "N/A".

1.0 Conduct a briefing periodically. (Hourly and after significant changes in plant conditions).

Briefing Time _____

a. Emergency classification/emergency organization status

b. Plant status (temperature, pressure, leak rate, equipment status etc.)

RCS Temp	RCS Press	RCP Status
RB Sump	RB Flood	BWST

c. Radiological conditions (specific release pathway, verify release duration, in plant radiological conditions, etc.)

EXHIBIT 5

d. Work in progress (equipment problems, evolutions in progress, etc.)

Priority jobs to mitigate event

1) _____

2) _____

3) _____

4) _____

Other _____

e. Personnel status (muster, accountability, evacuation, contamination, etc.)

f. Security and offsite support (security conditions, required offsite support)

g. Mitigating activities, future plans

EXHIBIT 6

Page 1 of 2

EOF Access Control Checklist

Initials

- ___ 1.0 Upon arrival at the EOF, request Environmental Radioactivity Lab personnel to unlock the door and keep the Main Gate open.
- ___ 2.0 Ensure all entrances other than the main entrance are locked or have positive access control in order to maintain access control to the EOF.
- ___ 3.0 Activate the DADCO Door Monitor (located at the Main Entrance) by depressing the "Green" power button.
 - ___ a. Locate door number (1) on the alarm panel and place this door in standby mode by depressing the "black" button one time.

NOTE

This will cause the indicator light to switch from solid green to amber.

- ___ b. If an alarm is received on any other alarmed door, silence the alarm by depressing the silence button. This will terminate audible alarm.
- ___ c. Check status of door by depressing black button corresponding to the door one time. If door is open, the amber light will flash. If closed, amber light will remain solid.
- ___ d. If door indicator light is flashing or is solid (amber), notify Group Lead Admin. Support or E.P. Rep. to verify status of door. Request a walkthrough be conducted to verify only authorized personnel are present in the facility.
- ___ e. If door is verified to be secure, reset door by depressing black button corresponding to door, to return indicator button to green secure mode.
- ___ f. If door is unsecure, and must remain open, positive access control shall be determined by Group Leader Admin Support or E.P. Rep.
- ___ 4.0 Obtain the EOF access list from the glass case located next to the name board and ensure all authorized personnel frisk, if necessary.

EXHIBIT 6

NOTE

Personnel requesting entry to the EOF, must produce a TMI company photo ID badge or be on the approved access list. All other personnel requesting entry must be authorized by the Group Leader Administrative Support, the Emergency Preparedness Representative or the Emergency Support Director.

NOTE

Steps a, b, and c, below, may be performed in any order and may be repeated if necessary. Any of these steps that are not needed can be skipped and marked "N/A".

- ___ a. If unauthorized personnel attempt to gain access to the EOF, the individual assigned access control should contact Dauphin County Control by dialing 911 on an outside line and request assistance from the Susquehanna Township Police.
- ___ b. If a person frisking causes an alarm, direct the individual to remain at that location and notify Group Leader R&EC.
- ___ c. If you are notified by an individual that they have consumed an alcoholic beverage within the past five (5) hours or believe an individual should be tested for Fitness for Duty requirements, notify the Emergency Preparedness Representative.
- ___ 5.0 Forward completed checklist to the Emergency Preparedness Representative.

NAME _____ TIME _____ DATE _____
EOF Access Control

**EXHIBIT 7
TMI Access Authorization Checklist**

NAME: _____ COMPANY: _____
SSN: _____ BADGE #: _____

The criteria identified by this checklist shall be completed and verified prior to authorizing access of NRC personnel during emergency conditions. Deviation from these requirements shall only be permitted at the direction of the Emergency Director, Emergency Support Director or their designee.

NOTE

Complete only the applicable sections of this checklist, mark other sections "N/A" (e.g., mark Section A as N/A for non-NRC personnel).

A. NRC personnel shall be granted unfettered access upon verification of:

- _____ • The representative possesses "Q" or "L" clearance, has been authorized site access by the NRC Region I Office (King of Prussia, PA) or the NRC Headquarters (Rockville, MD) and appears on the current TMI Access Roster/5 SS Screen.
- _____ • The representative possesses a "Q" or "L" clearance, has been authorized access by Regional Office and/or Headquarters, but does not appear on the TMI Access Roster/5 SS terminal. In this case a letter of access authorization shall be forwarded (via telefax) to the Emergency Operations Facility.
- _____ • The representative does not possess a "Q" or "L" clearance and must have an escort for entry into the protected area.

If Step 1 or 2 are complete check box 1 on Access Authorization Form, if only Step 3 is completed, check box 2 on Access Authorization Form.

Verification Signature: _____
Group Leader Admin Support/Designee Date

All other personnel require Emergency Director, Emergency Support Director or designee authorization and if not fully qualified for unescorted access require a qualified site staff member as an escort.

NOTE

Permission for site entry should be obtained through the ESD Assistant.

B. Rad Con (Non-RWP Access)

- _____ • Complete Temporary Issue Paperwork.
- _____ • Issue TLD.

Verification Signature: _____
Group Leader R&EC/Designee Date

EXHIBIT 7

C. Rad Con/Training (Escorted RWP Access - No Respirator Areas)

- _____ • Complete Step B.
- _____ • View G.E.T. Film.

NOTE

Both 1/2 inch and 3/4 inch format tapes are stored in the EOF cabinet.

- _____ • Practical Factor Performance not required.
- _____ • Whole Body Count (waived if no facilities available).

Check Box 3 of the Access Authorization Form

Verification Signature: _____
Group Leader R&EC/Designee Date

D. Rad Con (Unescorted RWP Access - No respirator Areas)

- _____ • Ensure Steps B and C are complete.
 - _____ • Complete practical factors.
- Individual granted unescorted RWP Access (No Respirator Areas).
- Check Box 4 of the Access Authorization Form.

Verification Signature: _____
Group Leader R&EC/Designee Date

E. Rad Con (Unescorted RWP Access with Respirator)

- _____ • Ensure Steps B, C and D complete.
 - _____ • Documentation provided by NRC of satisfactory completion of respiratory medical or receive GPU Nuclear medical.
 - _____ • Complete TMI Respirator Training.
 - _____ • Complete TMI Respirator Fit Test.
- Individual granted unescorted RWP Access to all areas.
- Check Box 5 of the Access Authorization Form.

Verification Signature: _____
Group Leader R&EC/Designee Date

TMI - Unit 1
Emergency Plan
Implementing Document

Number

EPIP-TMI-.27

Revision No.

18

Emergency Operations Facility

**EXHIBIT 7A
NRC TMI Access Authorization**

Page 1 of 1

NAME: _____ SSN: _____

1. Authorized unescorted TMI Site Access.
Authorized by Signature: _____

2. Authorized escorted TMI Site Access.
Authorized by Signature: _____

3. Authorized non-respirator RWP Access with an escort.
Authorized by Signature: _____

4. Authorized unescorted non-respirator RWP Access.
Authorized by Signature: _____

5. Authorized to wear the following respirator(s) and unescorted RWP Access.
Respirator Type _____ Size _____
Respirator Type _____ Size _____
Authorized by Signature: _____

Security Badge #: _____ Issued By: _____ Date: _____

NOTE

It is the individual's responsibility to maintain a copy of this form with them at all times. Failure to keep a copy of this form can result in Site/RWP Access being denied.

EXHIBIT 8
TMI Par Logic Diagram

SITE AREA EMERGENCY IS DECLARED

Determine which initial PAR is appropriate if a GENERAL EMERGENCY is declared.

- (1) Evacuate the 5 mile radius around the plant and shelter the 5 to 10 mile radius around the plant
OR
(2) Shelter the 10 mile radius around the plant

Continue assessment of all available Plant and Field Monitoring information.

GENERAL EMERGENCY IS DECLARED

EVACUATE THE 5 MILE RADIUS AROUND THE PLANT AND SHELTER THE 5 TO 10 MILE RADIUS AROUND THE PLANT UNLESS IT IS KNOWN THAT SHELTERING OF THE 10 MILE RADIUS AROUND THE PLANT WILL OFFER GREATER PROTECTION. (See NOTE below)



CONTINUE ASSESSMENT BASED ON ALL AVAILABLE PLANT DATA AND FIELD MONITORING INFORMATION



Expand EVACUATION recommendation to the 10 mile radius around the plant if VALID dose assessment/measurement information indicates that areas outside the 5 mile radius will exceed 1 REM TEDE or 5 REM CDE (Child Thyroid)

NOTE

- The intent is to evacuate the 5 mile radius around the plant as an initial PAR. The decision to recommend sheltering rather than evacuation should be made **ONLY** when it is clear that the evacuation cannot be completed within the release time. For example, the release has already stopped, the release can be stopped simply by turning off a piece of equipment, or there is a deliberate venting of the Containment Building with more than one valve available for isolation.

SECURITY EVENT

- When **EITHER** the Control Room or the Remote Shutdown area is available the initial PAR should be to **SHELTER** the 10 mile radius around the plant.
- When **BOTH** the Control Room and the Remote Shutdown area are lost the initial PAR should be to **EVACUATE** the 5 mile radius and **SHELTER** the 5 to 10 mile radius around the plant.

**EXHIBIT 9
EP Representative**

Activation

1.0 Start log for your position in accordance with EPIP-TMI-.05.

NOTE

Steps a through c may be completed in any sequence. Steps that do not apply to the present situation may be skipped or marked "N/A".

- a. Establish Access Control in accordance with Exhibit 6, EOF Access Control Checklist until relieved by the Group Leader Admin Support.
 - If an individual is not available to implement Exhibit 6, proceed as follows:
 - i. Insure the door is locked
 - ii. Display a sign stating "Ring doorbell for facility access".
- b. Test ESO personnel who admit to having had a drink in the last five hours in accordance with Fitness for Duty requirements (Exhibit 9A).
- c. Determine if the EOF is 1 hour (from the time displayed on the pager) staffed and ready to be activated.
 - Ensure that personnel properly use the EOF Name Board and are wearing tags to identify the position they are filling.
 - Determine vacant positions by looking at remaining nametags
 - a. Ensure that vacant positions are provided to the EOF Communications Coordinator so that personnel can be contacted to fill the positions.
 - Obtain an activation status report from the following positions:
 - a. ESD Assistant
 - b. Group Leader - Rad and Env Controls
 - c. Technical Support Rep
 - d. Public Information Representative - EOF
 - e. EOF Communications Coordinator
 - f. RAC Line Communicator
 - g. ESD Logkeeper
 - h. EAC

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- d. When all of the above positions are activated, report to the ESD that the EOF is 1 hour staffed and ready to be activated.

2.0 EP Operational Checklist

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- a. Determine status of the Emergency Response Facilities from the ED Assistant and report the results to the ESD Assistant.
- b. Inform the ESD that the EOF is fully staffed when the Group Leader Administrative Support and supporting staff have arrived.
- c. Advise the ESD and other Emergency Response Organization members on all Emergency Plan related matters.
- Proper interface with the State and the NRC
 - Proper Emergency Classification Level
 - Proper Protective Action Recommendation
 - Proper use of Emergency Plan Implementing Procedures
 - Offsite notifications (if that responsibility has been transferred to the EOF)
- d. Upon the arrival of the NRC and State personnel
- Provide a briefing.
 - i. Status of the Event
 - ii. Structure of TMI organization
 - iii. Request directives in writing to the ESD

NOTE

Use completed Exhibit 4 and, if available, Exhibit 5 to enhance the briefings

- Introduce them to their counterparts.

EXHIBIT 9A

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**Emergency Operations Facility
Fitness for Duty Determination Instructions**

NOTE

The fitness for duty rule applies to all TMI employees (including TMI contractors and vendors) granted unescorted access to the protected area or who are required by position or name to report to the EOF. These instructions address their evaluation for utilization in an emergency only. All "for cause" evaluations must be conducted by the Medical or Security Department.

Scope:

In accordance with 1000-ADM-2002.06, Fitness for Duty, individuals responding to an emergency who have consumed alcohol within the previous five hours but believe that they are fit for duty shall inform the Emergency Support Director and receive an evaluation. Contractor/vendor personnel shall be asked if they have consumed alcohol within the previous five hours. If the answer is yes, an evaluation shall be conducted.

Instructions:

The Emergency Support Director shall direct the Emergency Preparedness Representative to administer the breath alcohol evaluation in accordance with Exhibit 9A.

NOTE

Extra copies of ALCO Sensor III operational checklist are kept with the instrument.

Based on the results of the test, perform the following:

- a. BAC 0.01% or less

Allow the individual to work in the facility.

- b. BAC greater than 0.01% but less than 0.04%

Allow the individual to work in the facility. Re-test the individual approximately every thirty minutes to determine the maximum BAC. If the maximum BAC is equal to or greater than 0.04%, refer to Step 3. If less than 0.04%, no further action is required.

EXHIBIT 9A

- c. BAC equal to or greater than 0.04%

If determined that the individual's unique knowledge or skills are required, that individual shall only be permitted to work with the permission of the Site Director (or in his/her absence, his/her designee), Emergency Support Director, Emergency Director or Office of the President only after satisfactory assurance that the individual is capable of performing his/her duties. Remind the Emergency Support Director that if this individual is needed to work, he/she must be escorted at all times. Arrangements should be made as soon as practicable for (for cause) testing in accordance with 1000-ADM-2002.06.

NOTE

Individuals not "on call" who report to their facility and test equal to or greater than 0.04 percent BAC are not subject to disciplinary action.

- d. Ensure the individual who tested equal to or greater than 0.04, if not needed, is not permitted to drive home. Provide a place for the individual to rest or contact Group Leader - Admin Support to arrange for transportation.
- e. Be alert for any individual that exhibits aberrant behavior or the smell of alcohol. Test these individuals in accordance with this exhibit. If aberrant behavior cannot be attributed to a positive BAC reading, ask the Group Leader - Admin Support to contact the Security Department for further action.

EXHIBIT 9A
ALCO Sensor III Operational Checklist
Sample

Page 3 of 3

TEST SUBJECT NAME: _____
SOCIAL SECURITY NO: _____
TIME OF TEST: TEST 1 _____
TEST RESULT (BAC): TEST 1 0. _____ %
OPERATOR NAME: _____

DATE _____
SERIAL NO: _____
TEST 2 _____
TEST 2 0. _____ %
SIGNATURE: _____

INSTRUCTIONS - check each box after completion of step.

NOTE

The fifteen minute observation period of the subject may be waived as long as a positive test result is not received. Should a positive test result be indicated, it shall be disregarded and the alcohol breath test started anew after at least a 15 minute observation period.

A weak battery is indicated by an "8.888" in the display window. Replace battery.

1. Check temperature window on back of unit (should read 20° to 36° C).
2. Have the individual mount mouth piece on unit.
 Press "READ" button and hold for 10 seconds. Check to see if .000 is constant. If not, press "Set" button and recheck in one minute. If the display reads greater than .000, remove the instrument from service and forward to the Medical Department for repair and use another instrument for testing.
4. Press "SET" button.
5. Instruct subject to take a deep breath and blow steadily through the tube until told to stop
 (minimum of 4 seconds). (NO smoking within fifteen [15] minutes of test.)
6. Push "READ" button during third second that the subject is blowing. (Subject MUST continue
 to blow for a minimum of one [1] second after the "READ" button is depressed.)
7. Keep "READ" button depressed until reading stops climbing.
8. Record reading and time of TEST 1/TEST 2. (NOTE: The two readings must agree within
 ±10% of the averages of the two measurements, if not, use another instrument).
9. Press "SET" button to accelerate elimination of reading and electrically clean the cell surface.
10. Wait a minimum of two minutes and a maximum of 10 minutes and repeat Steps 3 through 9.

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Emergency Support Director Assistant Checklist

I. ACTIVATION

INITIAL

- a. Upon arrival at the EOF, ensure that steps are being taken to expeditiously activate the EOF.
 - Assist the ESD in the completion of Exhibit 1.
 - Assist the ESD in the completion of Exhibit 4.
- b. Report your status as activated when requested by the Emergency Preparedness Representative.

II. OPERATIONS

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- a. Refer to EPIP-TMI-.01, "Emergency Classification and Basis", whenever major plant changes have occurred to determine if a change in emergency classification is warranted.
- b. If the ESD has assumed the responsibilities for "Approving and directing official notifications to off site agencies; then perform the following:
 - Inform the EOF Communications Coordinator that the ESD has assumed responsibility for off site notifications.
 - Assist the ESD in filling out the Emergency Report Form - TMI.
- c. When the ESD leaves the main room of the EOF, assume the Person-In-Charge role until the ESD returns.

NOTE

This does NOT include assuming the responsibilities that the ESD has assumed from the ED.

- Interrupt ESD conferences to inform the ESD of major changes that occur in the plant.

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- d. Promptly process press releases received from the PI Rep - EOF for ESD review and approval.
- e. Assume the TMI, Point-Of-contact role for any inquiries from the following:
 - NEI (Technical and Regulatory Division)
 - EPRI
 - ANI
- f. Assist the ESD in the completion of Exhibit 5.
 - Insure each completed Exhibit 5 includes the Briefing Time.
- g. Forward the completed checklist and all logs to the Emergency Preparedness Representative at the end of the event.

Name _____ Time _____ Date _____
ESD Assistant

EXHIBIT 12

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Public Information Representative - EOF

I. ACTIVATION

- ___ a. Contact the Duty PI REP to advise of your arrival at the EOF and to determine whom will be writing Press Releases and whom will be the Media Briefer.
- ___ b. Start a log of all telephone calls in accordance with EPIP-TMI-.05.
- ___ c. Report your status as activated when asked by the Emergency Preparedness Representative.

II. OPERATION

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- ___ a. Gather information about the emergency and provide it to the Media Briefer and News Release Writer, as appropriate:
 - Be especially attentive to any radiological situation, whether or not a radiation release is occurring. ANY release of radiation in the context of the emergency SHOULD be reported to the Press Release Writer and Media Briefer.
 - Use the "Plant Emergency Information Checklist" (Refer to Exhibit 1C of the TMI Emergency Communications Response Manual) to obtain plant information.
 - Develop Bullets of information (e.g., RCP 'A' has been restarted) from attending ESD Conferences and obtained outside the conference.
 - i) Information not obtained directly from plant indications needs to have ESD Assistant review and ESD approval.
 - ii) ALL BULLETS must be reviewed and APPROVED by the ESD.
 - iii) Obtain ESD approval of bullets generated during an ESD conference before the ESD leaves the conference room.
 - iv) Fax the authorized information to the Media Briefer.

- Continually update the Media Briefer and the Press Release Writer using the Emergency Information Checklist.
- Keep in contact with the PI REP – ECC who is to route new information to the JIC as requested.

NOTE

You are also required to provide real-time information about plant conditions, without ESD approval, to the JIC staff in order to assist the Media Briefer's understanding of changing plant conditions.

Press Releases

- b. When DRAFT Press Releases are received review them for accuracy before submitting them to the ESD Assistant for processing and obtaining ESD APPROVAL. Refer to Exhibit 13, Press Release Guidance, to enhance your review.
 - Depending on the change required either mark up the DRAFT and have the Press Release Writer make the corrections before the processing below:
 - i) Give it to the Group Leader R&EC for review and approval
 - * Be persistent to get it reviewed and INITIALED PROMPTLY
 - ii) Give it to the Tec Support Rep for review and approval
 - * Be persistent to get it reviewed and INITIALED PROMPTLY
 - iii) If required, have Security perform a review for SAFEGUARDS information
 - * Be persistent to get it reviewed and INITIALED PROMPTLY
 - iv) Give it to the ESD Assistant for submittal to the ESD for review and approval
 - * Be persistent to get it reviewed and SIGNED PROMPTLY
 - Press Releases announcing anything other than emergency level changes or Media advisories (e.g., JIC activated) must be approved by the Emergency Support Director.
 - Fax or deliver if the JIC is at the EOF the initialed (APPROVED) DRAFT Press Release to the Press Release Writer to obtain a final Press Release.
 - i) Call the Press Release Writer and provide the changes verbally to expedite the Press Release process.
 - Maintain copies of the Press Releases.
 - Provide a copy of ALL APPROVED Press Releases to the ESD.

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- _____ c. Ensure that emergency level changes and the criteria for those changes are **IMMEDIATELY** communicated to the Media Briefer.
- Obtain a copy of the completed Emergency Report Form-TMI, if developed at the EOF, and transmit to the Media Briefer at the JIC.
- _____ d. Upon termination of the emergency forward all logs, forms, draft Press Releases, approved Press Releases, completed checklists and other pertinent documentation to the Emergency Preparedness Rep.

Name _____ Time: _____ Date _____
PI REP - EOF

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**EXHIBIT 13
Press Release Guidance**

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- 1.0 Press releases should be issued as soon as possible, typically within one hour from the time that a major plant event has occurred. Press releases shall be written in accordance with the following guidelines:
- a. The following categories of information should be included in press releases.
- **Level of Emergency**
This is simply identifying which of the four emergency levels was declared.
 - **Basis for Emergency Declaration**
This should be a simplified description of the plant condition which produced the emergency declaration (e.g., a leak of radioactive water within a plant building).
 - **Operations Status of the Plant**
A simple description of the plant status at the time of the emergency declaration (e.g., TMI was operating at 100% power, however, the plant is currently reducing power).
 - **Company/Government Interface**
This is intended to inform the public that TMI has notified and is working closely with government officials so that public confidence and company credibility can be increased, or maintained.
 - **Corrective Actions**
This should be a non-technical description of what plant personnel are doing to correct the problem. It may include such language as "attempts are being made to stop the leak" or "plant personnel are investigating the cause of the leak."
 - **Off-site Impact**
A statement which simply assess what impact this event may have on the environment. This is intended to provide factual information on off-site radiological conditions (e.g., a radioactive release is in progress, however, monitoring teams have not detected any radiation levels in excess of normal background).
- The initial press release should include all or part of the above information, however, at the very least, it should contain information from the parts above.
- b. In addition, the following guidance should be used in issuing press releases:
- Speculation, Dose Projections and Protective Action Recommendations should not be included in press releases.

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- Press Releases SHALL have the concurrence of the Emergency Support Director. Press Releases, should have engineering, radiological and as appropriate Safeguards review.
 - a. Exceptions to this are limited to releases that are media advisories or releases that only contain 'boiler plate' information (e.g., level of emergency without any specific details or that the Joint Information Center is now activated).
 - i. The ED/ESD should be made aware of these advisories.
 - b. Original initialed copies are retained for records.
- Press releases should be reviewed promptly to support timely (< 1 hour) issuance.
- Press releases should avoid undefined technical terms and abbreviations (e.g., plant names, trip, etc.)
 - a. Press releases should be written to be as simple as possible.
 - i. Where possible, descriptions should be used instead of technical terms. For example, "back up power source" should be used in place of "diesel generators".
 - b. Additional list of Technical terms and alternate words.

Technical Terms

Suggested Descriptions

Accountability

The process of accounting for all plant personnel

Auxiliary Building

Building housing support equipment for the Reactor

RMG22
RMG23

A monitor which detects radiation levels inside the Reactor Building

Contaminated

Has loose radioactive material on it, him, her.

Contamination

Loose radioactive material

Containment Building

Building which houses the Reactor or Reactor Containment Building

Cladding

A metal tube containing the nuclear fuel

Control Rod

A device which when inserted in a reactor stops the generation of power

Critical

Sustained Chain Reaction

EXHIBIT 13

<u>Technical Terms</u>	<u>Suggested Descriptions</u>
Diesel Generator	Emergency Power Unit or Back Up Power Source
Fission Products	Radioactive materials made from operating the Reactor
Fission Products Barriers	Barriers designed to contain the radioactive materials made from operating the Reactor.
Fuel Cladding Failure	Damage to the metal tubes containing the nuclear fuel.
Fuel Pool	Underwater Storage Area for Nuclear Fuel
Grid	Electrical Distribution System
Hot Well	Tank that collects condensed steam
Loss of Off Site Power	The plant has lost its connection to the Electrical Distribution system
Noble Gas	Radioactive Gas
Penetration	Opening through the wall
Plume	Radioactivity released in the air or water
Poison	A material which reduces power in the reactor
PORV	Pressure Relief Valve
Primary System	The system that circulates water through the Reactor to remove heat
Protected Area	Security Barrier around the plant
Radionuclides	Radioactive material
Reactor Building	Building which houses the reactor or reactor containment building
Reactor Building Purge	A means of exchanging air inside the Reactor Building with outside air
Reactor Trip	Automatic or Manual Shutdown of the Reactor

EXHIBIT 13

Technical Terms

Suggested Descriptions

Reuter Stokes

Off Site electronic Radiation Monitors

SCRAM

Immediate or Fast Shutdown of the Reactor

Secondary System

Non Nuclear Steam System

Steam Generator

Heat Exchanger where steam is made

Subcritical

No self sustaining chain reaction

Half Life

Time it takes for half of the radioactive material to decay away

EXHIBIT 14
Site Access Policy for Media During Emergencies

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NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- 1.0 Providing site access to media personnel during a plant emergency or in the recovery from a plant emergency is in the best interest of the company and the public. However, media access to the site must not impair the response to the emergency.
- 2.0 Responsibility for approving site access rests with the Emergency Support Director, or, if the EOF is not activated, with the Emergency Director. Refer to Section 5 of this exhibit for responsibilities.
- 3.0 For purposes of media access to the site during an emergency, the same industrial safety and security standards and requirements that apply to non-essential employees will be applied to the media.
- 4.0 **Communications Dept. Responsibilities**
 - a. Requests for media access will be made to the ESD or ED by the Public Information Duty Representative or the Communications Emergency Team Leader.
 - b. Communications will provide the ED/ESD with the number of media to gain site access, areas to be accessed and length of time the media will be there. (Communications will decide the number of media gaining access based on conditions at the time of the emergency. An attempt will be made to gain access for, at a minimum, one representative each from radio, television and print media.)
 - c. Communications will provide media transportation on and off site.
 - d. Communications will have each member of the media sign a Media Access Briefing Form, indicating they were briefed about the risks as they were known at the time by Company Management.
 - If media access does not involve entry into a posted radiologically controlled area:
 - a. The Communications staff will conduct the sign in and badging of media at TMI.
 - i. Communications will notify the Security Coordinator prior to proceeding with Site Access.
 - b. Communications will supervise and escort the media while on site.
 - c. Communications will conduct a briefing explaining the radiological and industrial conditions and risks on site.

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- If media access involves entry into a posted radiologically controlled area:
 - a. Media will be processed at the EOF, as appropriate, receiving dosimetry, training, bioassay, waivers and briefings based on established procedural requirements.
 - i. Communications will notify the Security Coordinator prior to proceeding with Site Access.
 - b. Communications in conjunction with Radiological Controls will supervise and escort the media while in posted radiologically controlled areas.

5.0 ED/ESD Responsibilities

- a. The ED/ESD will consult with the RAC/Group Leader R&EC, and media will be granted access if the projected dose will not exceed the 500 millirem annual limit including external and internal exposure.
 - For Security driven events, media access to the Site must also be approved by the Local Law Enforcement Agency/Security.
- b. Approve media access to the site if requirements are met.

**EXHIBIT 15
Technical Support Rep Checklist**

I. ACTIVATION

Initials

1.0 Activate the Tech Support Rep position.

- a. Start the Technical Support Representative Log in accordance with EPIP-TMI-.05, "Communications and Record Keeping".
- b. Assign a communicator to communicate on the Technical Functions Line with the communicator in the Technical Support Center (TSC).
 - Instruct the communicator to log telephone conversations in accordance with EPIP-TMI-.05, "Communications and Record Keeping".
- c. Verify that the CRT to the Plant Process computer is being activated in accordance with Exhibit 15A instructions.
- d. Verify that the projection information System is activated.
 - Use instructions posted at the projection unit.
- e. Report your status as activated when asked by the Emergency Preparedness Representative

II. Tech Support Rep Operations

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- a. Contact the TSC to determine the following:
 - Operational status of the plant
 - Mitigating activities
 - i. Completed
 - ii. Underway
 - iii. Planned
 - Release information
 - i. Pathway
 - ii. Duration

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- b. Provide the ESD with a summary of the plant status, as obtained from the TSC.
- c. Act as the Point-of-Contact for the BRP Engineering Representative.
 - Keep the BRP Representative informed of plant status and mitigating activities.
- d. Attend ESD Conferences and be prepared to discuss technical issues
 - Core Conditions
 - Barrier status
 - i. RCS
 - ii. Clad
 - iii. Containment
 - Mitigating activities
 - i. In progress
 - ii. Being evaluated
 - What could make the situation worse?
- e. Commence Accident assessment functions by:
 - Monitoring plant parameters
 - Conducting trend analysis of key parameters
 - Display information on Status Boards
 - i. Update information on a routine basis
- f. Review and concur on draft Press Releases
 - Use Exhibit 13, if required.
 - If Press Release is acceptable from a technical point of view, endorse it by initialing the document for ESD approval.
- g. If problems are encountered with communications equipment contact the EOF Communications Coordinator for resolution.
- h. Forward the completed checklist and all other pertinent documentation to the Emergency Preparedness Representative at the end of the event.

Name _____ Time: _____ Date _____
Tech Support Rep.

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EOF

Plant Process Computer Access Instructions

1. To put computer on line, verify system is energized or energize by turning on the computer and monitor.
 - a. If the computer and monitor are energized but there is nothing displayed on the monitor, adjust the contrast knob as needed.

NOTE

This is for the dedicated line access.

2. Simultaneously press the following keys ("Shift" and "On Line/Off").
 - a. This may not work on the first attempt - try again.
 - b. If the system does not come on line, access the PPC using the modem instructions in Step 9.
3. If PPC access is granted, the words "Off Line" at the bottom right hand corner of the screen will disappear.
4. Press the key marked "GROUP" or any other function key to access the PPC.
5. Enter the number of the area you wish to access, and press "Execute".
6. From any menu screen, select the display number to be printed and then press the print button (other functions are per users guide).
7. To automatically print the first 10 displays in the EOF area, push the EOF print button.
8. To quit,
 - 8.1 Clear the screen, press "cancel" twice.
 - 8.2 Simultaneously press the following keys ("Shift" and "On Line/Off Line").
 - 8.3 Reduce contrast to eliminate monitor display.

Modem Access (Backup)

9. If the direct access fails, proceed as follows:

9.1 Press the "C" (cell) button.

9.2 Press the "Go" button.

NOTE

The modem will automatically dial the following two numbers:
9-717-948-9114
9-717-948-9115

9.3 When the numbers are dialed and connected, proceed with Step 4.

10. If PPC access is not successful or problems are encountered with the computer, call 9-717-948-8606 for assistance.

11. To quit, proceed as follows:

11.1 On Aydin Keyboard press CANCEL twice.

11.2 On Aydin Keyboard press and hold down the SHIFT key (either RIGHT or LEFT) and press the On/Off Line key or xmit page key.

NOTE

An OFFLINE message may briefly appear in the lower right hand corner.

11.3 On modem press the following buttons.

11.3.1 "DISC"

11.3.2 "GO", the modem will display "DISCONNECTED".

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TMI/NRC Emergency Response Interface Criteria

This is a synopsis of the NRC emergency response process as it applies to TMI.

Upon arrival of the NRC, the ED/ESD should:

- Verify who is the senior NRC person in charge
- Ask the senior NRC person to inform the ED/ESD when the position of Director Site Operations is assumed and whether the responsibility to issue directives is included.
- Request that the NRC keep TMI Management informed of all substantive information exchanges between the NRC and the state.
- Request the NRC provide all DIRECTIVES in writing.

In essence, directives from the NRC must come from the NRC Director (typically, the NRC Chairman) or from the NRC Director of Site Operations (typically, the NRC Regional Administrator). Such advice or directive can only be communicated to the Emergency Director (the Emergency Support Director once the EOF is activated). If a directive order is issued by the NRC Director or Director of Site Operations, the ED/ESD should request written confirmation which spells out the specific nature of the directive.

While NRC advice may be challenged by the ED or ESD, directives must be complied with.

With respect to protective action recommendations for the public, the NRC may either endorse the TMI's recommendation or opt to recommend a different one. The ED/ESD is encouraged to include the NRC and State representatives in the protective action recommendation discussions in order to arrive at a mutually agreeable recommendation. In the event that the NRC opts to recommend a different PAR, they will attempt to resolve their differences with the utility prior to recommendations to the State. Their recommendation, like the utility recommendation, will be considered by the State in the development of a Governor directive.

SYNOPSIS - NRC EMERGENCY RESPONSE

Revision 2 to NUREG 0728, supplemented by NUREG-0845 and NUREG-1471, describes the manner in which the NRC will respond to an incident and provides criteria for making preplanned response decisions. They provide procedural guidance, describe the functions related to NRC emergency response and define procedures for responding to the following NRC modes of operation.

1. Normal Mode
2. Standby mode
3. Initial Activation
4. Expanded Activation
5. Deactivation

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Each mode defines the scope of NRC activities related to a particular level of emergency response in ascending order of degree of involvement to deactivation. The various modes are characterized as follows:

1. Normal mode - Normal activities designed to maintain readiness.
2. Standby mode - Regional Office activates the Incident Response Center (IRC) with an appropriate staff and NRC Headquarters Operations Center is staffed by a Standby Team.
3. Initial Activation - NRC Operations Center is staffed by a response team, the Regional IRC is fully activated and a Site Team is dispatched under the leadership of the Regional Administrator, normally designated as Director of Site Operations (DSO).
4. Expanded Activation - Focus of NRC response operations is shifted to the site. DSO is designated primary spokesman for the NRC and may be empowered with directive authority by the Chairman of the Nuclear Regulatory Commission.
5. Deactivation - Follow-up activities (e.g., reviews, investigation and recovery operations).

The particular mode assumed by the NRC will be dependent upon Licensee event classification and "independent NRC perception of relative severity of uncertainty of accident conditions".

NRC functions defined in NUREG 0728 which impact directly on the Licensee are:

1. Evaluate Incident and Plant Status

 NRC personnel at the site, the Regional Office and the Headquarters will acquire the necessary data to develop and maintain a complete and accurate overview of the evolution and status of the event. This will involve data gathering via ERDS, ENS, HPN, and other FTS 2000 telephones as well as direct communications with the Licensee at the ERF's.
2. Evaluate Licensee Actions

 NRC personnel will evaluate Licensee actions to mitigate the consequences of the incident and provide recommendations concerning protective actions for the public.
3. Project Incident Consequences and Plant Status

 Based on information and evaluations discussed above, the NRC will develop an independent projection of the likely further course of events.

4. Advise, Assist or Direct Licensee

The NRC may offer advice or assistance to the Licensee during an emergency, or may respond to Licensee requests for advice of assistance. This may involve diagnosis of critical problems, development of proposed remedial courses of action, and proposals to implement additional precautionary measures. The NRC is also prepared to direct that certain actions be taken if, after thorough discussion with the Emergency Director (the Emergency Support Director once the EOF is activated) it is decided that such direction is required. In the event that such action is taken by the NRC Director or the NRC Director of Site Operations, the ED/ESD should request written confirmation which spells out the specific nature of the directive. Directives will be communicated directly to the ED/ESD from the NRC Director (NRC Chairman) or from the NRC Director of Site Operations (DSO), typically the Regional Administrator, once appointed and empowered to do so.

Several important concepts govern the NRC in providing advice, assistance, or direction. They are:

- a. The Licensee is at all times responsible for mitigating the consequences of the incident.
- b. Although the NRC could issue formal orders to the Licensee to take certain measures and to monitor implementation, ". . . licensee continues to make other key operational decisions and to operate and manage the facility . . .".
- c. The NRC must have a single voice when advising or directing the Licensee.
- d. The ED/ESD has the option to accept or challenge NRC advice.

At no time will advice or direction come from both the Director and the DSO and the Licensee will always be kept apprised of who is empowered to exercise authority as the NRC spokesman. All other NRC personnel in contact with Licensee personnel are responsible to make clear that discussions should not be construed as advice or direction but rather as a sharing or gathering of information.

5. Inform Public and Monitor Public Information

During emergency situations, the NRC will formulate its own press releases based on information gathered from the Licensee and from NRC personnel. Procedures exist to ensure that press releases are approved by one person. That person may be the Regional Administrator, NRC Chairman, or DSO depending on the current NRC mode of operations. NRC draft press releases will normally be shared with the Licensee; however, this does not imply a request for approval by the Licensee. The intent is to identify issues needing clarification prior to release to avoid confusing or misleading the public.

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EXHIBIT 16

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6. Recommend Protective Actions for the Public

The NRC responsibility during an emergency, as during normal operations, is to ensure that protection of public health and safety is adequate. One aspect of this responsibility is to provide protective action recommendations or advice to offsite authorities. This may take the form of an NRC endorsement of a Licensee protective action recommendation or the NRC may opt to recommend additional protective actions. The NRC is not normally involved in the process of recommending protective actions, however they may get involved if a major problem is identified with the protective actions recommended by the licensee or protective actions undertaken by the state or local government. Additionally NRC involvement may be requested by state or local officials.

7. Review, Investigate and Document Response Actions

The scope of this task is not preplanned by the NRC; however, it is apparent that this may require a great deal of interaction between the Licensee and the NRC after-the-fact.

SYNOPSIS - REGION I SUPPLEMENT

The Region I Incident Response Supplement to NUREG 0845 restates many of the concepts of NUREG 0845 in greater detail as they apply specifically to Region I.

Section I - Concept of Operations delineates general duties and responsibilities and describes the NRC modes of operation. Relative to the authority of the DSO, it states:

"The Director of Site Operations (DSO) supervises/manages all NRC personnel and operations at the site, is the NRC spokesperson, represents the NRC in interactions with other agencies and carries out the authority delegated by the Director of the NRC Executive Team (Chairman).

Delegated authority will include one or more of the following:

(a) authority to recommend actions to the Licensee, (b) authority to direct the Licensee to take specified actions, and (c) authority to recommend actions offsite, including protective measures for the public.

The Chairman of the NRC, by memo dated 4/22/80, indicated the Chairman may delegate authority to the Regional Administrator as DSO, upon transfer of control of NRC actions and resources to the site, to issue orders to a Licensee during an emergency. It is intended that this authority be used as a last resort to mitigate the emergency conditions only if, in the judgement of the NRC, the Licensee has shown it is incapable of controlling the emergency. This authority is valid only in an emergency when the Regional Administrator (or other senior NRC official) is the DSO and specific authorities have been transferred to him by the Chairman or designated alternate".

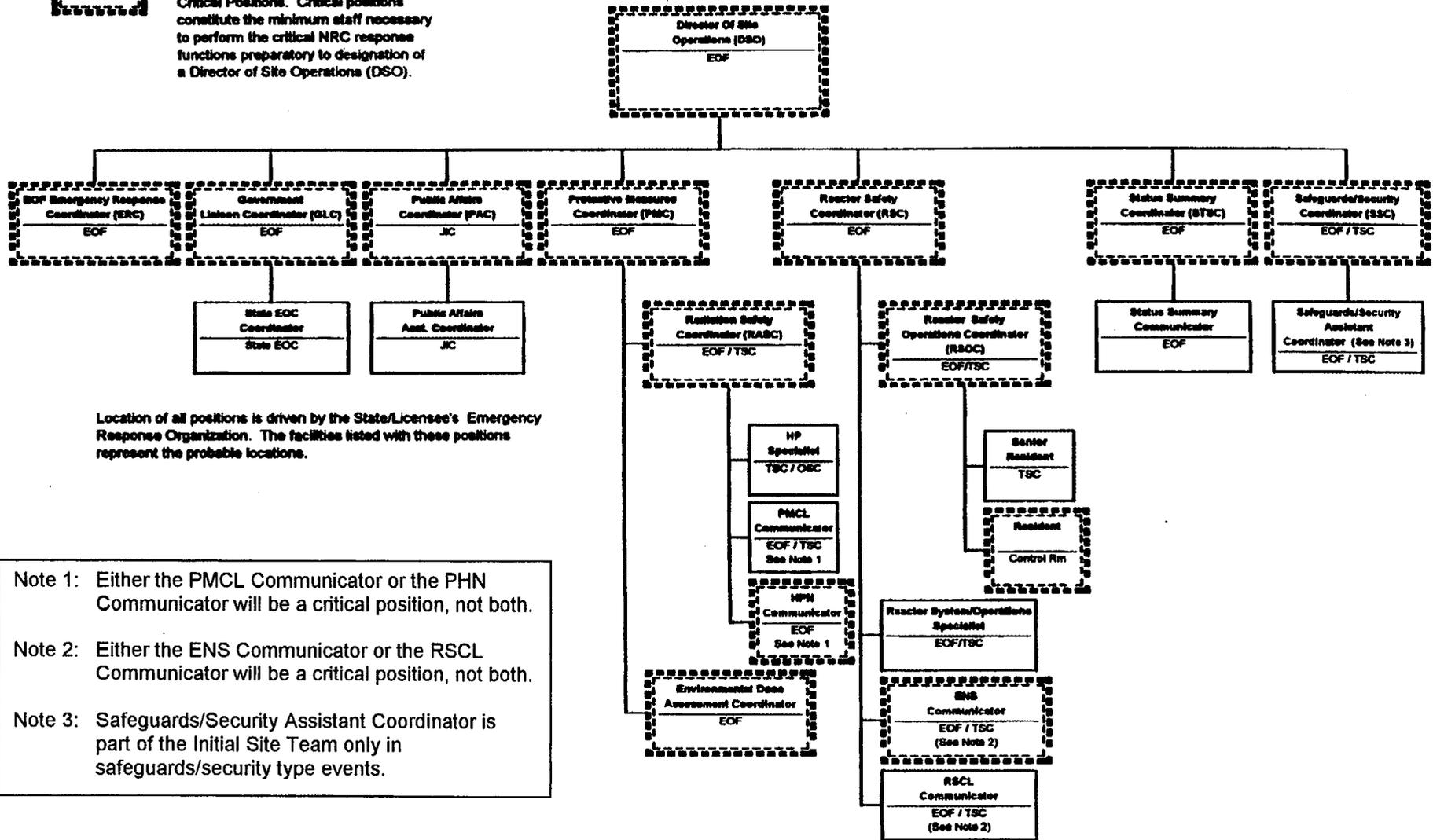
Sections II and III contain detailed procedures specific to Region I and present no new concepts of interest to the Licensee.

The attachment to the synopsis is provided for your information. This attachment depicts the Site Team Organization and is an extract of the NUREG-1471. It defines the number of NRC personnel expected to operate in each facility and shows the lines of communications the NRC expects to use.

EXHIBIT 16



Dashed bordered boxes indicate Critical Positions. Critical positions constitute the minimum staff necessary to perform the critical NRC response functions preparatory to designation of a Director of Site Operations (DSO).



Location of all positions is driven by the State/Licensee's Emergency Response Organization. The facilities listed with these positions represent the probable locations.

- Note 1: Either the PMCL Communicator or the PHN Communicator will be a critical position, not both.
- Note 2: Either the ENS Communicator or the RSCL Communicator will be a critical position, not both.
- Note 3: Safeguards/Security Assistant Coordinator is part of the Initial Site Team only in safeguards/security type events.

EXHIBIT 17

Group Leader - Radiological and Environmental Controls Checklist

I. ACTUATION

Initials

1.0 Activate the Group Leader – Radiological and Environmental Controls position.

- _____ a. Start the Group Leader R & EC log in accordance with EPIP-TMI-.05, Communications and Record Keeping.
- _____ b. Turn on the Group Leader R & EC computer to access the Emergency Information Network (e.g., RAC information, or dose projections).
- _____ c. Contact the RAC to obtain a status of the situation.

Use list below as a guide, it is not all-inclusive.

- Release path(s)
- Release duration
- In plant radiological conditions
- Samples requested

- _____ d. Contact the Environmental Assessment Coordinator (EAC) to obtain a status of the situation.

Use list below as a guide, it is not all-inclusive.

- Field team status
- Weather forecast
- Reuter Stokes

- _____ e. Inform the Emergency Preparedness Representative that the Group Leader R & EC position is activated.

II. OPERATION

2.0 Perform the following:

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- a. Review dose projection information

- b. Review field monitoring information
- c. Perform dose assessment
- Compare dose projections against field monitoring data.
 - Determine if the dose projections are accurate (i.e., Field monitoring team data within a factor of 10 and less than the dose projection).
 - Compare dose projections and field monitoring team data to EPA PAG's.
 - Review weather forecast data for impact on the dose assessment process.
- d. Keep the ESD informed on the following:
- All radiological issues.
 - All environmental issues.
 - All industrial health issues.
 - All safety issues.
- e. IMMEDIATELY inform the ESD if, after thorough dose assessment, you conclude that EPA Protective Action Guidelines (PAG's) will be exceeded anywhere offsite including OUTSIDE the 10 mile EPZ.
- f. Report any telephone problems to the EOF Communications Coordinator.
- g. Direct Access Control personnel to set up the EOF frisking station.
- If appropriate, require personnel to frisk prior to entering the EOF.
 - If personnel require decontamination, refer to procedure 6610-ADM-4330.02, Personnel Contamination Monitoring and Decontamination.
- h. Review DRAFT press releases developed for ESD approval to insure accuracy in the radiological information.
- Use Exhibit 13 for guidance to ensure the releases do not contain the following:
 - a. Technical jargon
 - b. Acronyms
 - c. Dose Projections
 - d. Protective Action Recommendations
 - Correct the press release, as required.
 - Endorse the correct release for ESD approval by initialing.

- i. Periodically brief the following on current radiological and environmental conditions.
- ESD
 - NRC
 - State representative (BRP)
- a. Notify the State (BRP representative) if valid offsite dose projections are ≥ 25 REM thyroid dose.
- b. Inform the State (BRP representative) of any problems with the automated dose projection code.
- Insure the level of conservatism in the calculation is presented.
- j. Consider the following if, the Training Center is used as the Near-Site JIC and / or the Remote Assembly Area (RAA)
- Evacuation of these facilities should NOT occur prior to evacuation of the general public.
 - Evacuation orders, for the general public, do NOT automatically apply to the RAA.
 - Relocation of the RAA should be considered if, the projected dose at the facility reaches 4 REM (TEDE) or 40 REM (CDE).
 - If relocated, the RAA and the JIC should be re-established at the EOF.
 - If warranted, provide radiological protection instructions to the RAA Team Leaders.
- k. As necessary, assist the Access Center Coordinator in the completion of the TMI Access Authorization Checklist for NRC personnel requiring access to the site.
- If additional dosimetry issue support is needed, request the Group Leader – Admin Support call out a Radiological Support Technician.
- l. Forward the following to the Emergency Preparedness Representative
- Completed Group Leader R & EC checklist
 - Completed Group Leader R & EC log

2.1 Attend ESD conferences.

a. Discuss dose assessment information

- Dose projections
 - i. Insure the level of conservatism in the calculation is presented.
- Field monitoring team results
- Sample results

b. Provide information concerning Protective Action Recommendations (PAR)

- Appropriate PAR in accordance with Exhibit 8
- When EPA PAG's are exceeded outside 5 mile radius
- When the EPA PAG's are exceeded outside 10 mile EPZ
 - i. Dose projections covering the 10 to 30 mile radius can be found on the Emergency Information Network.
 - ii. Recommend protective actions outside the 10 mile EPZ as follows:
 - a. Expand the evacuation area in 5 mile increments
 - b. Utilize a 360 degree approach
 - c. Expand the area such that EPA PAG's are not expected to be exceeded outside the recommended radius (e.g., If PAG's are expected to be reached at 17 mile radius, the PAR would include the 20 mile radius).

c. Inform the NRC representative of any problems with the automated dose projection code.

- Insure the level of conservatism in the calculation is presented.

Name _____ Time: _____ Date _____
Group Leader - Radiological & Environmental Controls

EXHIBIT 18

Environmental Assessment Coordinator Checklist

1.0 Activate the Environmental Assessment Coordinator Position.

- ___ a. Start an EAC log in accordance with EPIP-TMI-.05, "Communications and Record Keeping.
- ___ b. Ensure that the Met/Dose Coordinator position is activated.
- ___ c. Ensure the Emergency Information Network (EIN) Computer is activated.
- ___ d. Establish communications with the RAC.
- ___ e. Report the EAC and Met/Dose Coordinator positions as activated when asked by the Emergency Preparedness Representative.

2.0 Operations

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

a. Keep the Group Leader R & EC and the RAC informed on the status of the following:

- Field Team measurements
- Reuter Stokes readings
- Meteorological data
- Plume Travel

NOTE

The items listed under "a" above are met if EIN is active and displaying proper data.

- Weather forecasts
- Environmental Monitoring sample results (if available)
- Other pertinent information

EXHIBIT 18

- b. Interpret field team data.
- Ensure field team data is entered in the EIN (Onsite/Offsite Teams).
 - Compare field team data to projections.
 - Report results of comparison to the Group Leader R & EC and, as appropriate, to the RAC.

- c. Evaluate Reuter Stokes information.
- Compare Reuter Stoke information to field team data.
 - Report results of comparison to the Group Leader R & EC and, as appropriate, to the RAC.

- d. Ensure weather forecast information is provided to the Group Leader R & EC and to the RAC.

NOTE

Be especially sensitive to changes in dispersion at dusk and dawn.

- e. If problems are encountered with the telephones, contact the EOF Communications Coordinator.

- f. As additional personnel are available assign them to the following positions, as needed to help fulfill EAC responsibilities.

- Field Team Coordinator
- Dose Projection Computer Operator
- Radio Communicator
- RAC Communicator

- g. Forward the completed checklist and all other pertinent documentation to the Emergency Preparedness Representative at the end of the event.

Name _____ Time: _____ Date _____
Environmental Assessment Coordinator

EXHIBIT 18A

Met/Dose Coordinator

1.0 Activate the Met/Dose Coordinator position.

- _____ a. Start a log in accordance with EPIP-TMI-.05, "Communications and Record Keeping"
- _____ b. Energize the following, if not already done.
 - EACC Computers
 - EACC Printers
 - EACC radio
- _____ i. Perform radio check
- _____ c. Deploy Field Monitoring Teams
 - _____ • Make team assignments.
 - _____ • If EOF access control has been established, inform the access center coordinator that there will be more than one access area open while field monitoring teams are being dispatched.
 - _____ • Instruct the field monitoring teams to ensure that there is no unauthorized entry.
 - _____ i. Instruct the teams to secure the door upon their departure.
 - _____ ii. Instruct them to inform you upon departure.
 - _____ • Instruct the team to perform field monitoring per EPIP-TMI-.10, "Onsite/Offsite Radiological/Environmental Monitoring".
- _____ d. Access the Emergency Information Network (EIN).
 - _____ • If the LAN connection is unavailable the EIN data will not be available and functions of the Reuter/Stokes, Midas, and the meteorology will have to be obtained by alternate means.
- _____ e. Obtain present meteorological parameters.
- _____ f. Report to the EAC that the Met/Dose Coordinator position is activated.

2.0 Operations

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- _____ a. Obtain a current weather forecast by any of the following means:
 - From a meteorologist, if available
 - i. Obtain a weather forecast if the meteorologist can provide one over the telephone.
 - ii. Ask the meteorologist to report to the EACC.
 - From National Weather Service information found on the LAN or the Internet.
 - From the National Weather Service directly using the telephone numbers found in EPIP-TMI-.06.
- _____ b. Direct the Field Monitoring Efforts
 - _____ • When the EAC and MET/Dose Coordinator positions are activated and the field monitoring teams are operational, inform the RAC that the EACC is ready to assume responsibility for radiological and environmental monitoring.
 - _____ i. Request the RAC inform the ED assistant that the EACC is operational.
 - _____ ii. Provide the following message to Field Monitoring Teams.

ATTENTION FIELD MONITORING PERSONNEL. THE ENVIRONMENTAL ASSESSMENT COMMAND CENTER IS ACTIVATED AND WILL ASSUME RESPONSIBILITY FOR ALL RADIOLOGICAL AND ENVIRONMENTAL MONITORING AS OF _____. ALL TEAMS RESPOND BY CONFIRMING THIS MESSAGE.
(Time)

- Use MIDAS plume plots and meteorological data to properly position the teams for monitoring duties while keeping their doses ALARA.
 - i. Provide redundant tracking of field team accumulated doses, after field teams reports accumulate 500 mRem of thyroid dose.

EXHIBIT 18A

Page 3 of 3

- Direct the Field Teams to perform monitoring activities such as but not limited to:
 - i. Scan to find plume center line
 - ii. Perform dose rate surveys
 - iii. Obtain air samples
- Interpret field team data.
 - i. Ensure field team data is entered in the EIN.
 - ii. Compare field team data to that projected by MIDAS and the RAC dose codes.
 - iii. Report results of comparison to the EAC and, as appropriate, to the RAC.

- c. Based on the forecast data meteorological parameters used by the dose projection system are reasonable.
- d. Edit the MIDAS plume plots as necessary.
- e. Keep the EAC informed of changes in the meteorology.
 - Verify that the meteorological information appears to be accurate (e.g., the data is not remaining exactly the same over an extended time [30 - 45 minutes], it seems consistent with forecast information).
- f. Using weather forecasts, obtained in Step 2.1, relay the expected trend in dispersion factors and wind direction.

NOTE

Be especially sensitive to changes in dispersion at dusk and dawn.

- g. Enter data on the EIN
 - As time permits, enter field team data (Onsite & Offsite)
 - i. Field team data is collected using Exhibit 18B.
 - Evaluate the data for consistency.
- h. Forward the completed checklist and all other pertinent documentation to the Emergency Preparedness Representative at the end of the event.

Name _____ Time: _____ Date _____
Met/Dose Coordinator

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EXHIBIT 18B

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Field Team Designation: _____

Date: _____

Location	Time	Open Window E520 (mR/hr)	Average Closed Window E520 (mR/hr) or Frisker (cpm)		
			Air Sampler		
	Time	Sample Type	Net CPM	Run Time	Flow Time
		Iodine			
		Particulate			
		Smear			
		Noble Gas			

Field Team Designation: _____

Date: _____

Location	Time	Open Window E520 (mR/hr)	Average Closed Window E520 (mR/hr) or Frisker (cpm)		
			Air Sampler		
	Time	Sample Type	Net CPM	Run Time	Flow Time
		Iodine			
		Particulate			
		Smear			
		Noble Gas			

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EXHIBIT 19

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RAC Line Communicator

I. ACTIVATION

1.0 Activate the RAC Line Communicator Position.

- a. Turn on the Group Leader Radiological and Environment Controls computer and access the Emergency Information Network, if not already completed.
- b. Establish communications with the RAC by manning the Radiological Line.
 - Dial "22" on the ML-8000 System.
- c. Establish a Telephone Communications Logsheet in accordance with EPIP-TMI-.05, "Communications and Record Keeping".
- d. Report your status as activated when asked by the Emergency Preparedness Representative.

II. RAC LINE COMMUNICATOR OPERATIONAL CHECKLIST

2.0 Assist the Group Leader Radiological and Environmental Controls as necessary.

- a. Forward the completed checklist and all logs to the Emergency Preparedness Representative at the end of the event.

Name _____ Time: _____ Date _____

RAC Line Communicator

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EXHIBIT 20

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Group Leader Admin Support

I. ACTIVATION

Initial

- 1.0 Activate the Group Leader Admin Support Function**
- a. Begin the Group Leader - Administrative Support Log in accordance with EPIP-TMI-.05, "Communications and Record Keeping".
 - b. Report your status as activated to the Emergency Preparedness Representative.

II. GROUP LEADER - ADMIN SUPPORT OPERATIONAL CHECKLIST

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

- 2.0 Implement EOF Access Control in accordance with Exhibit 6.**
- a. If an individual is not available to implement Exhibit 6, proceed as follows:
 - Insure the door is locked.
 - Display a sign stating "Ring doorbell for facility access".
 - 2.1 Determine, as necessary, where the following services can be performed or obtained.**
 - a. **General Administration**
 - Word processing
 - Typing pool
 - Reproduction
 - b. **Transportation**
 - Helicopter services
(Refer to EPIP-TMI-.06)
 - Vans
 - Buses
 - Automobiles
 - Shuttle service

EXHIBIT 20

- c. Personnel Administration and Accommodations
- Personnel processing
 - i) Registration
 - ii) Indoctrination
 - iii) Training
 - iv) Security badging
 - Lodging
 - Food
- d. Outside Plant Support
- Trailer setup
 - Janitorial Service
 - Telephones
- e. If problems are encountered with the telephones, contact the EOF Communications Coordinator.
- f. Process personnel requiring site access by implementing Exhibit 7, "TMI Access Authorization".
- Ensure a Radiological Support Technician is called out to activate the dosimetry issue function at the EOF.
- g. Assume the duties as the TMI Point of Contact for INPO.
- h. Using Exhibit 21, develop a watch-bill for the Emergency Support Organization that will support the emergency on a 24 hour / day basis.
- Determine from the ESD when he wants the first shift change to occur.
 - i. The time should be far enough in the future to give backup duty roster members time enough to get some rest before filling the second shift.
 - Use a 12 hour shift rotation.
 - Determine from each watch station the person that is presently filling that duty roster position.
 - i. List the person in the first shift position on Exhibit 21.
 - Determine alternate duty roster members.
 - i. Identify backup duty roster members already at the EOF.

EXHIBIT 20

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- ii. Using the Emergency Support Organization Duty Roster and telephone listings from the glass case next to the nametag bulletin board, call other duty roster members to determine their availability.
 - Fill in the second shift using the available backup duty roster members.
 - Pass out copies of each group's watch-bill to that group.
 - Have the ESD announce when the shift rotation will occur.
 - i. Call out additional personnel as required.
- 2.2 Contact the Emergency Director Assistant to obtain the status of Protected Area Accountability and Site Evacuation.
- a. Inform the ESD of the status.
 - b. If informed by the Emergency Assembly Area Coordinator that the EOF will be used as the Remote Assembly Area.
 - Prepare the EOF to receive site evacuees in accordance with Exhibit 22.
- 2.3 Attend ESD conferences and be prepared to discuss information concerning the following:
- NRC Incident Response Team
 - Status of Accountability
 - Status of Site Evacuation
 - i) Monitoring status
 - ii) Decontamination status
 - Other Agencies
 - Logistical information
- 2.4 Forward the completed checklist and all logs to the Emergency Preparedness Representative at the end of the event.

Name _____ Time: _____ Date _____
Group Leader - Admin Support

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**EXHIBIT 21
Emergency Shift Schedule**

Page 1 of 1

DATE: _____

GROUP: _____

Shift 1 Start _____ hours End _____ hours
Shift 2 Start _____ hours End _____ hours

List duty roster positions for your group including phone talkers/communicators being used.

Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		
Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		
Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		
Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		
Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		
Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		
Position # -	Name -	Name -
Home Phone Number		
Work Phone Number		
Beeper Number		

EXHIBIT 22

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EOF Set Up for Personnel Monitoring and Decon

NOTE

These steps may be performed concurrently.

- 1.0 Obtain the signs from the decon locker and post them as follows (see Exhibit 9 of EPIP-TMI-.36):
 - Post a magnetic "TMI Site Evacuees Enter Here" sign on the outside of the door to the sample storage area.
 - Post a "Clean Personnel Exit - No Entry" sign outside the small roll-up door to the sample storage area.
 - Post 2 "TMI Site Evacuees Use Garage Entrance" signs on orange safety cones and place them at the EOF gate.
 - Post a magnetic "Clean Personnel Exit - No Entry" sign outside the door at the front of the EOF near the NRC Conference Room.
- 0 Set up a frisking area in the sample storage areas as indicated on Exhibit 9 of EPIP-TMI-.36.
- 0 Erect radiological barriers as shown on Exhibit 9 of EPIP-TMI-.36.
- 4.0 Take the following personnel decon supplies from the decon locker to the men's room.
 - Paper towels
 - Waterless hand cleaner
 - Wash basin
 - Bath soap
 - Shampoo
 - Scrub Brushes
 - Nail Clippers
 - Barber scissors
 - Nasal swabs
 - Disposable PC's
 - Masking tape
 - Poly bags
 - Frisker
 - Step off pad
 - Procedure 6610-ADM-4330.02

EXHIBIT 22

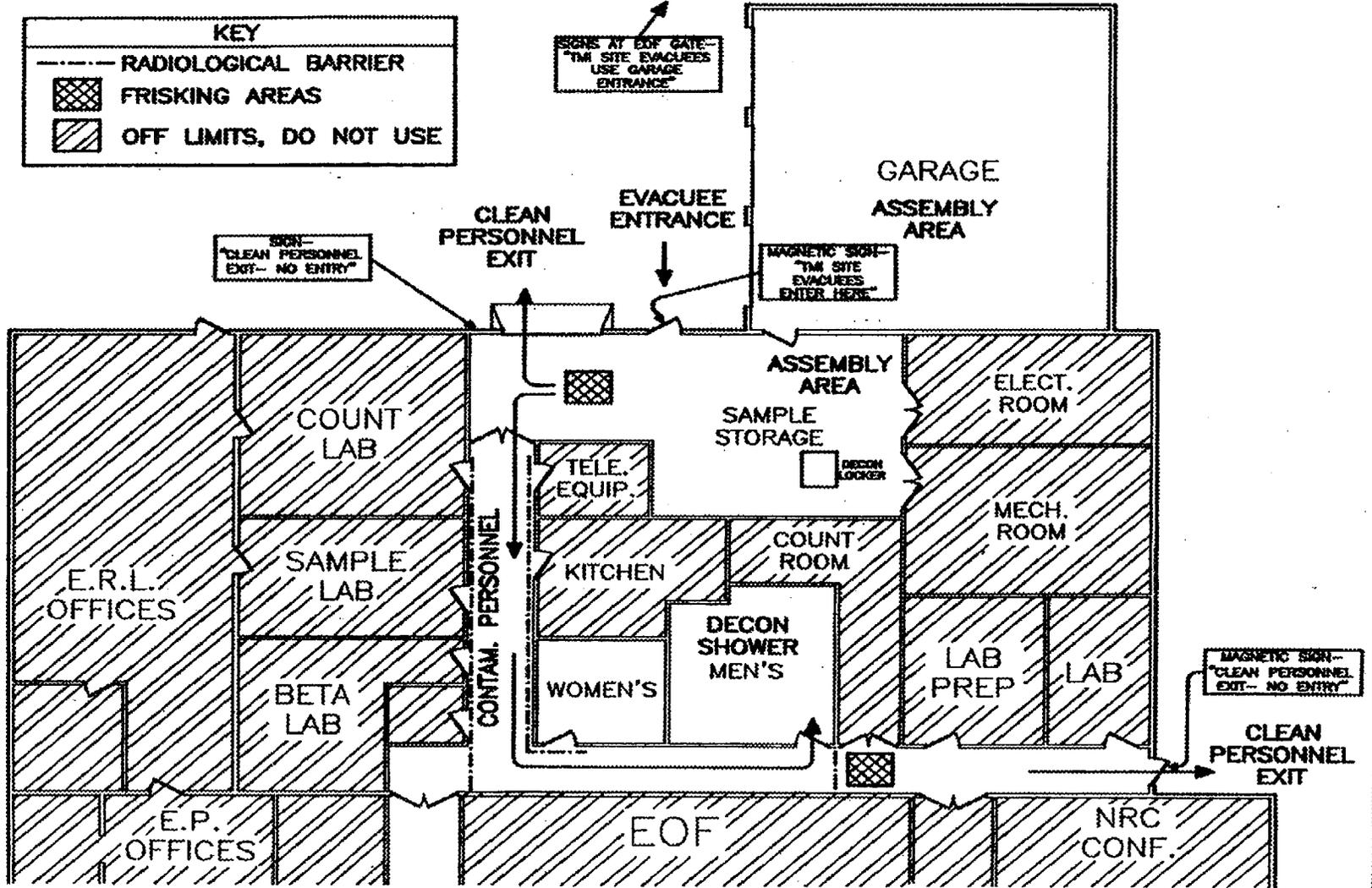


EXHIBIT 23
EOF Communications Coordinator

Page 1 of 2

I. ACTIVATION

1.0 Activate the EOF Communications Coordinator position.

- a. Synchronize the EOF clock, Admin Room clock and the ESD conference room clock with the Control Room clock.
- Dial 8070 (2070 for drills) and ask the ED Assistant for the Control Room clock time.
- b. Activate the Rayland Public Address System
- Depress the black power button.
 - Ensure the red power indicator light is solid red.
 - Test the PA system by depressing the red signal button located on the microphone. An alert tone should be heard. (Note: If the red power light or PA test does not work, verify the unit is plugged in.)
- c. Report your status as activated when asked by the Emergency Preparedness Representative.

EOF Communications Coordinator Operational Checklist.

NOTE

The following steps are not presented in the exact sequence that they are to be performed. It is likely that some steps will have to be performed out of the sequence listed and that some steps will be performed concurrently. Steps that are not applicable for the present situation may be skipped. Other steps may need to be repeated. This exhibit should be referred to periodically to ensure that necessary actions are not missed.

2.0 Maintain an EOF Status Board with the following information, as a minimum, using the overhead projector in the front of the room.

- Time when EOF is activated
 - Emergency Classification Level
 - Major changes in plant status
- a. Call in additional personnel if requested to do so by the Emergency Preparedness Representative.
- Obtain the positions that need to be filled from the Emergency Preparedness Representative.
 - Use the Emergency Support Organization Duty Roster and telephone listings from the notebook at the communications table.

EXHIBIT 23

- b. If the ESD informs you that he has assumed the responsibility for "approving and directing official notifications to off-site agencies", perform the following:
- Contact the ECC Communications Coordinator in the Shift Manager's Office (ECC) to receive a turnover.
 - i. Use EPIP-TMI-.06, Additional Assistance and Notification to obtain phone numbers.
 - Make notifications to offsite agencies in accordance with Exhibit 24, Offsite Notifications, using the message designated and approved by the ESD.
- c. Coordinate the procurement of outside resources (e.g., Technical assistance, manpower, equipment, etc.) with the Group Leader Admin Support.
- If requested to procure an outside resource, contact the Group Leader Admin Support for assistance.
- d. If problems are encountered with the Emergency Telephones
- Contact the ECC Communications Coordinator in the Shift Manager's Office (ECC).
 - i. Use EPIP-TMI-.06, Additional Assistance and Notification, to obtain phone numbers.
 - Provide the name of the telephone circuit and a brief description of the problem.
- 2.1 Forward the completed checklist and any other documentation to the Emergency Preparedness Representative at the end of the event.

Name _____ Time: _____ Date _____
 EOF Communications Coordinator

EXHIBIT 24
Off Site Notification Checklist

Initial in the box following the action for the level of emergency declared, unless a check is requested.

ACTION	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY	CLOSE OUT EMERGENCY
Obtain an Emergency Report Form, Part 1 and 2, from the Emergency Support Director					
Perform 15 minute notifications					
Confirm Dial tone on Notification line					
Dial "91"					
As the agencies answer, state, "This is Three Mile Island Nuclear Station. Stand by for an emergency message."					
Ask if each agency is on the line. [PEMA, are you on the line? Dauphin County?, etc.] Check when on line	PEMA Dauphin Cumberland Lancaster Lebanon York	PEMA Dauphin Cumberland Lancaster Lebanon York	PEMA Dauphin Cumberland Lancaster Lebanon York	PEMA Dauphin Cumberland Lancaster Lebanon York	PEMA Dauphin Cumberland Lancaster Lebanon York
Cancel the ring tone by flashing the hook switch twice.					
If one or more agencies do not answer promptly, get another person, such as the EP Representative, to perform a parallel notification using any telephone with an out side connection.					
Direct this person to log the Name/Dispatcher Number of the person contacted and the Time the notification was completed.					
State, "Please stay on the line after the following message to provide a name or dispatcher number and to confirm receipt."					
Read Emergency Report Form, Part 1					
RECORD TIME Notification completed					

EXHIBIT 24

ACTION	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY	CLOSE OUT EMERGENCY
<p>Request receipt confirmation. (NAME or DISPATCHER number)</p> <p>PEMA Dauphin Cumberland Lancaster Lebanon York</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p>Flash the hook switch until a dial tone is heard <u>before</u> hanging up.</p>					
<p>If <u>not</u> already notified in parallel by another person, Notify remaining agencies that did not receive the information by pre-set conference call.</p>					
<p>Log receipt confirmation by recording name/dispatcher number and time.</p> <p>PEMA Time Dauphin Time Cumberland Time Lancaster Time Lebanon Time York Time</p>	<p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

EXHIBIT 24

ACTION	UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY	CLOSE OUT EMERGENCY
Contact the GPU Energy System Dispatcher					
Dial 9-1-610-375-5421					
Read Emergency Report Form, Part 2					
Record the following for the person contacted Name _____ Time _____	_____	_____	_____	_____	
Contact ANI at 1(860) 561-3433 Read Emergency Report Form, Part 2 Provide call back number (717) _____ (Insert number) Point of Contact is Emergency Support Director Assistant					
Inform the Emergency Support Director Assistant when all contacts have been completed.					
EVENT TERMINATION notifications					
NRC Inspector, contacted above. Name _____ Time _____					_____
York Haven Power Station, contacted above. Name _____ Time _____					_____
System Dispatcher, contacted above. Name _____ Time _____					_____
Forward this CHECKLIST and ALL associated documentation to the Emergency Preparedness Representative					