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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
CHANGE TO EMERGENCY PLAN IMPLEMENTING PROCEDURES

Dear Sir or Madam:

In accordance with 10 CFR 50, Appendix E, Carolina Power & Light Company is transmitting one copy each of recently revised Harris Nuclear Plant Emergency Plan implementing procedures. The enclosure to this letter identifies the revised emergency plan implementing procedures and the effective date.

Questions regarding this submittal may be referred to Mr. J. R. Caves at (919) 362-3137.

Sincerely,

R. J. Field
Manager, Regulatory Affairs
Harris Nuclear Plant

MGW

Enclosures

c: Mr. J. B. Brady (NRC Senior Resident Inspector, HNP)
Mr. J. M. Goshen (NRR Project Manager, HNP)
Mr. B. S. Mallett (Acting NRC Regional Administrator, Region II) two copies of procedure

Harris Nuclear Plant
5413 Shearon Harris Road
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A045

CHANGE TO EMERGENCY PLAN IMPLEMENTING PROCEDURES

<u>PROCEDURE NUMBER</u>	<u>TITLE</u>	<u>EFFECTIVE DATE</u>
PEP-310, Revision 12	Notifications and Communications	12/07/01
PEP-340, Revision 9	Dose Assessment	12/14/01

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
PLANT OPERATING MANUAL

VOLUME 2

PART 5

PROCEDURE TYPE: Plant Emergency Procedure
NUMBER: PEP-310
TITLE: Notifications and Communications

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1.0 PURPOSE

The purpose of this procedure is to provide instructions and documentation for:

1. Requesting assistance from offsite support organizations (Immediate Response Organizations).
2. Notifying HNP Emergency Response Organization (ERO) personnel by automated and manual means.
3. Notification of offsite Emergency Response Organizations and authorities.
4. Notifications to the Nuclear Electric Insurance Limited (NEIL), Institute of Nuclear Power Operations (INPO) and American Nuclear Insurers (ANI).

2.0 INITIATING CONDITIONS

1. An emergency has been declared.
2. An event has occurred which requires a response from an offsite support organization (such as fire, medical or local law enforcement).

3.0 PROCEDURE STEPS

3.1 Requesting Off-Site Support

Instructions and documentation for response requests to offsite support organizations (fire, medical, law enforcement), also referred to as Immediate Response Organizations, is performed using PEP-310 Attachment 1.

3.2 Notifications Checklists

Checklists for use by the SEC-TSC/ERM to perform initial notifications following the declaration of an emergency are documented using the following appropriate Attachments to this procedure:

1. PEP-310 Attachment 2, Unusual Event
2. PEP-310 Attachment 3, Alert
3. PEP-310 Attachment 4, Site Area Emergency
4. PEP-310 Attachment 5, General Emergency

3.3 Activation of the Emergency Response Organization (ERO)

1. The Control Room staff initiates a Public Address System announcement directing on-site members of the ERO to activate the Emergency Response Facilities in accordance with PEP-230.
2. The Control Room staff initiates activation of the remainder of the ERO using PEP-310 Attachment 6. In the event of a Dialogic computer malfunction, PEP-310 Attachment 7 or PEP-310 Attachment 8, Part B, are used to initiate back-up methods of ERO activation.
3. Emergency Preparedness is to be contacted if any malfunction of the Dialogic System occurs.

3.4 Notification of Selected Personnel During an Unusual Event

For an Unusual Event, without staffing of the Emergency Response Facilities, selected personnel are notified using Part "A" of PEP-310 Attachment 8.

3.5 State and County Emergency Notifications

CAUTIONS

- Initial notification must occur within 15 minutes after the declaration of an emergency, a change in the classification level or a change in a Protective Action Recommendation.
 - Follow-up notification must occur within 60 minutes of the last notification while in a declared emergency.
-

1. Prepare the Notification Message

- A. Prepare the transmitted portion of the Emergency Notification Form (ENF), referring to the guidelines in PEP-310 Attachment 10 as necessary, by :
 - 1) Using ERFIS/RTIN to prepare an automated version, or.
 - 2) Hand writing a paper copy of PEP-310 Attachment 9, or
 - 3) Preparing an electronic equivalent of PEP-310 Attachment 9.
- B. The SEC-CR (or ERM if the EOF is activated) must review the message content, edit as necessary, and approve it for release.

2. Transmit the Notification Message

- NOTES:
- Once the State and/or County Emergency Operations Centers (EOC's) are activated, they will request that notification be transmitted directly to the EOCs rather than the Warning Points (WPs).
 - ERFIS/RTIN prepared ENFs are simultaneously faxed to each of the WPs and then each of the EOCs.
 - A. If the required locations have been sent a copy of the Emergency Notification Form via ERFIS (1.A.1 above), communicate the content of the form using PEP-310 Attachment 11, ERFIS Method).
 - B. If using the PEP-310 Att 9 Emergency Notification Form (1A.2 or 1.A.3 above), communicate the content using PEP-310 Attachment 12, Manual Method.

3.6 Nuclear Regulatory Commission Notifications

CAUTIONS

- Initial notification must occur as soon as possible (but not to exceed one hour) following the declaration of an emergency or a change in the classification level, unless continuous communications are established.
 - Activation of the NRC ERDS data link is required within 60 minutes of an Alert or higher event declaration.
 - Follow-up notification must occur within 60 minutes of the last message, unless continuous communications are established.
 - A qualified Emergency Communicator-NRC or SRO must be available to continuously communicate with the NRC via the Emergency Telecommunications System (ETS) or commercial telephone line within one hour of the initial event declaration.
-

- NOTES:
- Initial NRC event notification from the MCR may be performed using the State/County Emergency Notification Form in order to expedite the notification.
 - Communications on the ETS are automatically recorded by the NRC.
 - Initial communications will likely be interrupted by patch-ins and/or requests to repeat information.
1. Prepare the information for the NRC Notification (AP-617, or State/County notification form of section 3.5 for initial MCR notifications)
 2. Contact the NRC Headquarters Operations Officer at the NRC Incident Response Center by performing the following:
 - A. Pick up the receiver on the ETS telephone and call the NRC via one of the numbers listed on the phone.
 - B. If the ETS phone is not operable, use a normal telephone line to contact the NRC Incident Response Center. The numbers are listed on the ETS phone and in the Emergency Phone List (EPL-001).
 3. When the Headquarters Operations Officer responds, say: "THIS IS THE HARRIS NUCLEAR PLANT." and provide the emergency notification information.
 4. Respond to any requests for additional information that you can answer, otherwise, state that the information is not yet available and will be provided in a follow up message.
 5. Record the name of the individuals contacted and time of contact.

3.6 Nuclear Regulatory Commission Notifications (continued)

- NOTES:
- ERDS can be activated from any EDS/RTIN terminal in the MCR or TSC.
 - ERDS = NORMAL should be displayed at the bottom center of the ERFIS screens within 5 minutes of system activation in the following step.
6. Verify Emergency Response Data System (**ERDS**) is activated at an Alert or higher classification.

3.7 Notification of the INPO and ANI

CAUTION

Notification must occur within four (4) hours after declaration of an Alert, Site Area Emergency, or General Emergency.

1. Complete the Institute of Nuclear Power Operations (INPO) and American Nuclear Insurers (ANI) Notification Form (PEP-310 Attachment 13).
2. Using EPL-001, contact the INPO and ANI Duty Officers.
3. If contact is made with an answering machine or service:
 - A. Give the plant name, your name and telephone number for the Duty Officer to return the call.
 - B. When completing the form, enter "machine" instead of an individual's name.
4. Read the notification form directly to each Duty Officer and then record the name of each person notified, or
5. After notification is complete, record the date/time and sign the form.

3.8 Notification of Nuclear Electric Insurance Limited

NOTE: This notification is only applicable to events involving equipment damage.

1. The notification should be performed during normal working hours.
2. Notify the Corporate Insurance Administrator (see EPL-001) of the event and provide any details required for them to make the notification.

3.9 Transmittal of Plant Parameter Information to the TSC and EOF (ERFIS Failure)

1. Have the Admin and Logistics Manager (EOF) call in the following additional personnel while continuing with this procedure:
 - A. One Licensed operator to report to the Main Control Room to assist with data transmittal.

3.9 Transmittal of Plant Parameter Information to the TSC and EOF (ERFIS Failure)
(continued)

- B. One member of the operations staff to report to the TSC.
 - C. One member of the operations staff to report to the EOF.
 - D. Additional administrative support to report to the TSC and EOF for posting data.
2. A licensed operator in the MCR shall:
 - A. Prepare a copy of the Plant Parameter Information Form (PEP-310 Attachment 14) at 15 minute intervals, or as appropriate.
 - B. Fax the PPIF sheets, or verbally transmit the data, to the TSC and EOF (see EPL-001).
 3. TSC and EOF administrative personnel should post information as follows:
 - A. Copy the PPIF forms and distribute to appropriate personnel within the facilities, including the NRC, as directed.
 - B. Present the information by transcribing on status boards or project onto screens, as directed.
 4. TSC-SRO and EOF-SRO will provide clarification of data as needed
 5. When additional Operations staff arrive in the TSC and EOF they will:
 - A. Provide updated plant information from the Main Control Room to the TSC and EOF.
 - B. Relieve the TSC SRO and EOF SRO of the duties associated with clarification of data within their facility.
 - C. Coordinate data needs of the OSC and JIC.

4.0 **GENERAL**

4.1 Regulations and Other Commitments

- Alerting of on site personnel via Public Address announcement is required within 15 minutes of event declaration.
- Federal Regulations state "A licensee shall have the capability to notify responsible State and local governmental agencies within 15 minutes after declaring an emergency." This is satisfied when the event's emergency classification level has been directly communicated to the State and County officials (at least one of the agencies).
- Notification of event declaration to the NRC is required "as soon as possible" and no later than 60 minutes after an event declaration.
- Activation of the NRC ERDS data link is required within 60 minutes of an Alert or higher event declaration.

4.1 Regulations and Other Commitments (continued)

- Notification to Institute of Nuclear Power Operations (INPO) and American Nuclear Insurers (ANI) must occur within four (4) hours after declaration of an Alert, Site Area Emergency, or General Emergency.
- Nuclear Electric Insurance Limited (NEIL) notification is only applicable to events involving equipment damage.

4.2 ERO Activation (Call-Out) During Normal Working Hours

- NOTES:
- Normal working hours are 0730 to 1600, Monday through Friday (other than CP&L Holidays).
 - Control Room actions are the same for normal and off-normal hours.
 - The Dialogic Computer programming directs calls to where personnel are expected to be (that is, to work numbers during normal hours and a priority placed on calling home numbers during off-hours).
 - During "Normal working" hours ERO members are to report directly to the Emergency Response Facilities without taking time to "call in."

1. The Main Control Room (MCR), normally the Emergency Communicator - Control Room, makes a Public Address system announcement directing all ERO personnel to report to their Emergency Response Facilities.
2. ERO personnel are to respond to the PA announcement by directly reporting to their assigned emergency response facility.
3. The Emergency Communicator - Control Room activates the Dialogic system using PEP-310 Attachment 6.
 - A. The Dialogic system initiates the group call pagers of ERO members.
 - 1) The pagers will display a numeric message indicating the telephone number of Dialogic followed by a two number code (-X-1) where the "X" corresponds to the event classification level and the "1" signifies facility activation required (Pager carrying personnel are issued pocket cards to remind them of these codes).
 - 2) ERO personnel are to respond to this pager code by directly reporting to their assigned emergency response facility. No call back is required during normal working hours.

4.2 ERO Activation (Call-Out) During Normal Working Hours (continued)

- B. The Dialogic system also initiates telephone calls to work phone numbers of ERO personnel.
 - 1) ERO personnel are to respond to the telephone call and report to their Emergency Response Facility (ERF).
 - 2) Once alerted to the fact that the ERFs are being activated, all ERO personnel are to report. Personnel are not to wait at their desks for a call.
- 4. If an incorrect scenario has been entered into the Dialogic computer, or the System is making nuisance, invalid or disruptive calls, it can be deactivated by the MCR using section 6 of PEP-310 Attachment 6.
- 5. If the Dialogic System fails during normal hours:
 - A. The Emerg. Communicator - Control Room initiates a group page directly through the paging company using PEP-310 Attachment 7.
 - 1) The pagers will display a numeric message indicating the MCR telephone number followed by a two number code (-X-1) where the "X" corresponds to the event classification level and the "1" signifies facility activation required (Pager carrying personnel are issued pocket cards to remind them of these codes).
 - 2) ERO personnel are to respond to 9999-X-1 code by directly reporting to their assigned emergency response facility, without calling into the Control Room.
 - B. Manual call-out of unfilled ERO positions will be performed by the Admin and Logistics Manager (ALM) in the EOF at the direction of each emergency facility manager.

4.3 ERO Activation (Call-Out) During Off-Normal Hours

- NOTES:
- Off-normal hours are 1600 to 0730, Monday through Friday, weekends and CP&L holidays.
 - Control Room actions are the same for off-normal and normal working hours.
 - The Dialogic Computer programming directs calls to where personnel are expected to be (that is, priority is placed on calling home numbers during off-hours).
- 1. The Main Control Room (MCR), normally the Emergency Communicator - Control Room, makes a Public Address system announcement directing all ERO personnel to report to their Emergency Response Facilities.

4.3 ERO Activation (Call-Out) During Off-Normal Hours (continued)

2. On-site ERO personnel are to respond to the PA announcement by directly reporting to their assigned emergency response facility.
3. The Emergency Communicator - Control Room activates the Dialogic system using PEP-310 Attachment 6.
 - A. The Dialogic system initiates the group call pagers of ERO members.
 - 1) The pagers will display a numeric message indicating the telephone number of Dialogic followed by a two number code (-X-1) where the "X" corresponds to the event classification level and the "1" signifies facility activation required (Pager carrying personnel are issued pocket cards to remind them of these codes).
 - 2) Personnel with pagers are to call the number listed and answer the questions from the Dialogic computer.
 - a. The first qualified responder for each position, who meets FFD requirements, will be instructed to fill their ERO position. These personnel are to report to their facility
 - b. Subsequent responders calling in to the Dialogic system who are qualified in Key Positions, and who meet FFD requirements, will be notified to report to their facility.
 - c. The practice of having all available personnel in key positions respond to the facilities is designed to enhance the initial emergency response actions and timeliness of facility activation.
 - B. The Dialogic system also initiates telephone calls to home and cell phone numbers to activate the ERO for all required and unfilled positions.
 - 1) Personnel receiving telephone calls are to answer the questions from the Dialogic system.
 - 2) Once identified as being FFD the Dialogic system will notify the person of the position that they are filling and to report to their facility.
 - 3) None of the personnel contacted, other than the JIC Administrative Coordinator, make any calls. They immediately go to their facility.
 - 4) The JIC Administrative Coordinator initiates calls to Progress Energy Building (PEB) and Raleigh Civic and Convention Center (RCCC) setup and security personnel.
 - 5) The Dialogic system continues to attempt to fill all positions to the required staffing depth.

4.3 ERO Activation (Call-Out) During Off-Normal Hours (continued)

4. If an incorrect scenario has been entered into the Dialogic computer; or the System is making nuisance, invalid or disruptive calls, the system can be deactivated using section 6 of PEP-310 Attachment 6.
5. If the Dialogic System fails during off-normal hours:
 - A. The Emerg. Communicator - Control Room initiates a group page directly through the paging company using PEP-310 Attachment 7.
 - 1) The pagers will display "9999" followed by a two number code (-X-1) where the "X" corresponds to the event classification level and the "1" signifies facility activation required (Pager carrying personnel are issued pocket cards to remind them of these codes).
 - 2) ERO personnel are to respond to 9999-X-1 code by directly reporting to the assigned emergency facility, without calling into the Control Room.
 - 3) All responders for each position who meets FFD requirements will be instructed to fill their ERO position.
 - B. Manual call-out of unfilled positions will be performed by the Admin and Logistics Manager (ALM) in the EOF at the direction of each emergency facility manager.
 - C. If both Dialogic and the group page methods have failed, the MCR must initiate a manual call-out of the ERO using PEP-310 Attachment 8, Part B.
 - 1) The first person contacted in each position who meets FFD requirements will be instructed to fill their ERO position.
 - 2) The on-shift E&RC and Maintenance personnel are directed to call in additional staff to fill the ERO pool (technician) positions.

4.4 Off-Normal Hours Manual ERO Call Out

NOTE: During off-normal hours, without Dialogic operating, selected ERO personnel will be notified through a manual call out

1. On-shift personnel have the following responsibilities:
 - A. On-shift Operations personnel initiate a group page directly through the paging company as described in step 5 of section 4.3 above.
 - B. On-shift Maintenance personnel call in personnel as needed to augment on-shift staffing to meet the emergency requirements. As a minimum:
 - 3 Electrical/I&C Personnel
 - 2 Mechanical Personnel
 - C. On-shift E&RC personnel call in personnel as needed to augment on-shift staffing to meet the emergency requirements. As a minimum:
 - 8 OSC RP Pool Personnel
 - 4 EnMon Team Personnel
 - 1 Chemistry Technician
2. Manual call-out of unfilled ERO positions will be performed by the Admin and Logistics Manager (ALM) in the EOF at the direction of each emergency facility manager.

5.0 **REFERENCES**

5.1 Referenced Plant Emergency Procedures

1. PEP-110, "Emergency Classification and Protective Action Recommendations"
2. PEP-230, "Control Room Operations"
3. PEP-270, "Activation and Operation of the Emergency Operations Facility"
4. PEP-340, "Dose Assessment"
5. PEP-350, "Protective Actions"

5.2 Other References

1. AP-617, "Reportability Determination and Notification"
2. SP-015, "Emergency Plan Support"
3. EPL-001, "Emergency Phone List"
4. NRC IN 98-08, "Information Likely to be Requested if an Emergency is Declared"

6.0 **DIAGRAMS/ATTACHMENTS**

See Table of Contents

Request for Off-site Support**1. Support Determination****A. FIRE¹**

- ☐ Apex Fire Department (Inside or outside the Protected Area) 911
- ☐ Holly Springs Fire Department (Inside Protected Area) 911

B. MEDICAL

NOTE: Duke Life Flight will not transport a chemically or radiologically contaminated patient.

NOTE: Carolina Air Care or Duke Life Flight may be contacted directly for helicopter transport of an injured individual (Bypass 911 Dispatch).

- ☐ Apex Rescue Squad (Ambulance) 911
- ☐ Carolina Air Care (Helicopter) 1-800-247-6264
- ☐ Duke Life Flight (Helicopter) 1-800-362-5433

C. OTHER

- ☐ Wake County Sheriff Department 911
- ☐ Other (specify): _____

2. Contacting the Support Organization

NOTE: If the telephone cannot be used or 911 does not answer, direct Security to relay the message by radio.

NOTE: When contacting 911, use an outside extension (362-7992 or 362-7997 from the MCR) this will provide the dispatch center with information specifying HNP as the originating location.

NOTE: 911 calls are routed to the Wake County center. If Apex Rescue of Fire Department is requested, the call will be transferred to the Apex dispatcher. When the transfer occurs, repeat the message.

A. Contact the selected organization (from above) and say:

“This is the Harris Nuclear Plant, please dispatch the (as checked above)”

B. Provide and document a brief description of the reason for the request:

¹ When requesting Fire Department assistance, also request Medical assistance (Apex rescue squad) to support the fire fighting efforts.

Request for Off-site Support

2. Contacting the Support Organization (cont.)

NOTE: Do not allow the following request to delay emergency response (If not immediately available, a call back with the information is acceptable).

C. Request information: # Vehicles: _____ # Personnel: _____ ETA: _____

D. Record the time and date of the call: _____ / _____

3. Callback Requests:

If a call back verification is received, record:

Name of caller: _____ Time of call back: _____

4. Notify Security:

Notify Security of the following information, if available:

- ☐ Type of response (fire, sheriff, ambulance).
- ☐ Where to meet the responder (Security Building gate, helicopter landing zone).
- ☐ Number of vehicles and personnel responding.
- ☐ Estimated time of arrival.

5. Notify HP:

Notify the Duty HP Supervisor (or Radiation Control Director [RCD] in the TSC if Emergency Response Facilities are activated) of the following information, if available:

- ☐ Type of response (fire, sheriff, ambulance).
- ☐ Where the responder will be going.
- ☐ Estimated time of arrival.

6. Additional Notifications:

- A. If applicable, alert the receiving hospital to initiate their plan for handling contaminated patients (the destination can be obtained from the responding organization through the First Aid Team). _____ (Time)
- B. Notify a member of the EP staff (or *EP Advisor* in the EOF if Emergency Response Facilities are activated) to provide a courtesy notification of the event to offsite Emergency Management _____ (Time)
- C. Consult with the SSO to determine if notifications, other than the above, are performed, refer to AP-617 to determine whether an event notification under "Off-site Notification has or will be made" is required.

7. Completion:

Notification Completed: _____ (signature) _____ (date/time)

UNUSUAL EVENT NOTIFICATIONS CHECKLIST

Notification of Site Personnel - Standby Status

Completed ☐

CAUTION

During a security event, it may be advisable **NOT** to sound an alarm or make a PA announcement.

1. Make the following announcement over the public address system:
 - A. "Attention all personnel; attention all personnel: An Unusual Event has been declared due to (*brief description of initiating event*). All members of the ERO standby for further instructions. All other personnel continue with your present duties."
 - B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area.
2. Repeat the PA Message(s).

Notification of the ERO - Standby Status

Completed ☐

1. Notify or direct notification of the ERO per Section 3.3 using Attachments 6-8 as appropriate.

Notification of State and Local Agencies

Completed ☐

1. Notify or direct notification of the State and local authorities within 15 minutes of the event classification by communicating an initial Emergency Notification Form (Attachment 9) per Section 3.5 using Attachment 11 or 12 as appropriate.

Notification of the NRC

Completed ☐

1. As soon as possible but within 60 minutes of the event classification, inform the NRC using the ETS or a commercial telephone per Section 3.6.

Notification Completed: _____
(signature) (date/time)

ALERT NOTIFICATIONS CHECKLIST

Notification of Site Personnel - Dismissal of Personnel **Completed** ☐

CAUTION

During a security event, it may be advisable **NOT** to sound an alarm or make a PA announcement.

1. Have the Control Room sound the Site Evacuation Alarm for 15 seconds, then the TSC will make the following announcement over the public address system:
 - A. "Attention all personnel; attention all personnel: An Alert has been declared due to (*brief description of initiating event*). All members of the ERO report to your designated emergency response facility. All other HNP personnel exit the Protected Area and report to the Admin Building 2nd floor conference room area, and await instructions. All visitors, all nonessential contractor personnel, all declared pregnant females and all handicapped personnel please leave the site at this time."
 - B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area.
 - C. If there is a potential for an airborne radiological release, consider announcing that there will be no eating, drinking, or smoking until further notice.
2. Repeat the PA Message(s).

Notification of State and Local Agencies **Completed** ☐

1. Notify or direct notification of the State and local authorities within 15 minutes of the event classification by communicating an initial Emergency Notification Form (Attachment 9) per Section 3.5 using Attachment 11 or 12 as appropriate.

Notification of the NRC **Completed** ☐

1. As soon as possible but within 60 minutes of the event classification, inform the NRC using the ETS or a commercial telephone per Section 3.6.
2. Activation of the NRC ERDS data link is required within 60 minutes of an Alert or higher event declaration.

Action Verification **Completed** ☐

1. Have security verify public access areas have been evacuated.

Notification Completed: _____
(signature) (date/time)

SITE AREA EMERGENCY NOTIFICATIONS CHECKLIST

Notification of Site Personnel - Protected Area Evacuation	Completed <input type="checkbox"/>
<u>CAUTION</u>	
<p>During a security event, it may be advisable <u>NOT</u> to sound an alarm or make a PA announcement.</p> <p>Consider radiological conditions when preparing to evacuate personnel. If high dose rates will be encountered it may be better to shelter non-essential personnel onsite.</p>	
<ol style="list-style-type: none"> 1. Have the Control Room sound the Site Evacuation Alarm for 15 seconds, then the TSC will make the following announcement over the public address system: <ol style="list-style-type: none"> A. <u>If entering from no event or an Unusual Event:</u> "Attention all personnel; attention all personnel: A Site Area Emergency has been declared due to (<i>brief description of event</i>). All ERO members report to your designated emergency response facility. All other personnel exit the Protected Area and leave the site. Security, initiate Accountability." <u>If upgrading from an Alert:</u> "Attention all personnel, Attention all personnel: A Site Area Emergency has been declared due to (<i>brief description of event</i>). All personnel who are not part of the ERO exit the Protected Area and leave the site. Security, initiate Accountability." B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area. C. If there is a potential for an airborne radiological release, consider announcing that there will be no eating, drinking, or smoking until further notice. 2. Repeat the alarm and PA Message(s). 	
Notification of State and Local Agencies	Completed <input type="checkbox"/>
<ol style="list-style-type: none"> 1. Notify or direct notification of the State and local authorities within 15 minutes of the event classification by communicating an initial Emergency Notification Form (Attachment 9) per Section 3.5 using Attachment 11 or 12 as appropriate. 	
Notification of the NRC	Completed <input type="checkbox"/>
<ol style="list-style-type: none"> 1. As soon as possible but within 60 minutes of the event classification, inform the NRC using the ETS or a commercial telephone per Section 3.6. 2. Activation of the NRC ERDS data link is required within 60 minutes of an Alert or higher event declaration. 	
Verify Accountability	Completed <input type="checkbox"/>
<ol style="list-style-type: none"> 1. Security should report within 30 minutes of declaration of a Site Area Emergency that accountability is complete and provide the names of missing persons, if any. Log the time that Accountability was completed. 2. If not previously performed, direct Security to verify public access areas have been evacuated. 	

Notification Completed: _____ (signature) _____ (date/time)

GENERAL EMERGENCY NOTIFICATIONS CHECKLIST

Notification of Site Personnel - Protected Area Evacuation	Completed <input type="checkbox"/>
<u>CAUTION</u>	
<p>During a security event, it may be advisable <u>NOT</u> to sound an alarm or make a PA announcement.</p> <p>Consider radiological conditions when preparing to evacuate personnel. If high dose rates will be encountered it may be better to shelter non-essential personnel onsite.</p>	
<ol style="list-style-type: none"> 1. Have the Control Room sound the Site Evacuation Alarm for 15 seconds, then the TSC will make the following announcement over the public address system: <ol style="list-style-type: none"> A. <u>If entering into a GE from an Alert or lower:</u> "Attention all personnel; attention all personnel: A General Emergency has been declared due to (<i>brief description of event</i>). All members of the ERO report to your designated emergency response facility. All other personnel exit the Protected Area and leave the site. Security, initiate Accountability. There will be no eating, drinking, or smoking until further notice." <u>If upgrading from an Site Area Emergency:</u> "Attention all personnel, Attention all personnel: A General Emergency has been declared due to (<i>brief description of event</i>). There will be no eating, drinking, or smoking until further notice." B. If there is a localized emergency (for example, high radiation, fire), announce its type and location and instruct personnel to stand clear of this area. 2. Repeat the alarm and PA Message(s). 	
Notification of State and Local Agencies	Completed <input type="checkbox"/>
<p>NOTE: Protective Action Recommendations issued in accordance with PEP-110 are <u>mandatory</u> for a General Emergency Classification.</p> <ol style="list-style-type: none"> 1. Notify or direct notification of the State and local authorities within 15 minutes of the event classification by communicating an initial Emergency Notification Form (Attachment 9) per Section 3.5 using Attachment 11 or 12 as appropriate. 	
Notification of the NRC	Completed <input type="checkbox"/>
<ol style="list-style-type: none"> 1. As soon as possible but within 60 minutes of the event classification, inform the NRC using the ETS or a commercial telephone per Section 3.6. 2. Activation of the NRC ERDS data link is required within 60 minutes of an Alert or higher event declaration. 	
Verify Accountability	Completed <input type="checkbox"/>
<ol style="list-style-type: none"> 1. If not previously done, Security should report within 30 minutes of declaration of the a General Emergency that accountability is complete and provide the names of missing persons, if any. Log the time that Accountability was completed. 2. Verify Security has performed the actions for Exclusion Area Evacuation per SP-015. 	

Notifications Completed: _____ (signature) _____ (date/time)

Emergency Response Organization Activation - Dialogic System

NOTE: If the System is not operable, proceed directly to PEP-310, Attachment 7.

1. Scenario Determination:

Select the appropriate scenario number from the options below:

Off Normal Hours-1600 to 0730, Monday Thru Friday, Weekends and Holidays

- ☐ UNUSUAL EVENT - Pre-staffing Facilities21
- ☐ ALERT22
- ☐ SITE AREA EMERGENCY23
- ☐ GENERAL EMERGENCY24

Normal Working Hours, 0730 to 1600, Monday Through Friday

- ☐ UNUSUAL EVENT - Pre-staffing Facilities31
- ☐ ALERT32
- ☐ SITE AREA EMERGENCY33
- ☐ GENERAL EMERGENCY34

2. Connecting to the System:

NOTE: The number of step "B" below must be entered as soon as the system starts saying "Hello". If you wait too long the system will respond, "Hello, there is no activity at this time, goodbye" and hang up.

If this happens, hang up and start again at step "A".

<u>Operator Action:</u>	<u>Proper System Response:</u>
A. Dial 2452 on a plant extension or dial 362-2452 if using a Southern Bell line.	"Hello."
B. Immediately enter 4357 followed by the "#" key.	"Enter the scenario number you wish to work with."
C. Enter the appropriate scenario number (checked above) followed by the "#" key.	"You entered XX. Is that correct? Please press 9 for yes, 6 for no."
D. If correct, enter 9. - or - If incorrect, <ul style="list-style-type: none"> • enter 6 • hang up, and • repeat the above steps 	If "9" was entered: "The selected scenario has been completed. Do you want to queue it? Please press 9 for yes, 6 for no."
E. Enter 9	"You will queue scenario XX as an Emergency. Are you sure this is what you want to do? Please press 9 for yes, 6 for no."

Emergency Response Organization Activation - Dialogic System

2. Connecting to the System (continued):	
<u>Operator Action:</u>	<u>Proper System Response:</u>
F. Enter 9 , and Disregard the message (this a system default message not associated with the ERO activation process at HNP).	<i>"Press 1 to stop scenario monitor or press 2 to speak of the status. The selected scenario is active, goodbye."</i>
G. Hang up and prepare for system activation verification in the section below.	The System will soon dial telephones in the MCR (362-7992 or 362-7997).

3. System Activation Verification:	
<u>Operator Action:</u>	<u>Proper System Response:</u>
A. When one of the Direct Bell lines rings, answer the telephone and say	<i>Please enter a 2 followed by your social security number.</i>
B. Enter 2-123-45-6789	<i>You entered x-xxx-xx-xxxx is that correct? Please press 9 for yes, 6 for no."</i>
C. If correct, enter 9 , otherwise: enter 6 and follow the instructions to correct the SSN.	<i>Provide emergency classification and ask if you a fit for duty.</i>
D. Enter 9	<i>You will be filling the position of Main Control Room. Please enter your ETA in minutes.</i>
E. Enter 00 (any number will work)	<i>Thank you, goodbye</i>
F. If the computer functioned as expected, notify the SEC-CR that Dialogic is calling in the ERO. If the computer fails to communicate as listed, perform ERO activation using the pagers per PEP-310, Attachment 7.	

4. Completion:	
Inform SEC-CR of the results of the system activation.	
Notification Completed: _____	
(signature)	(date/time)

CAUTION:

Emergency Response Organization Activation - Dialogic System

The section below is performed **only if** the Dialogic system is malfunctioning.

5. Dialogic System Deactivation:	
If an incorrect scenario has been entered or the System is making nuisance, invalid, or disruptive calls, the Dialogic System can be deactivated using the following steps.	
<u>Operator Action:</u>	<u>Proper System Response:</u>
<u>NOTE:</u> Following the next step you must rapidly enter the first number of the password as the System is saying "Hello". If you wait too long the system will respond, "Hello, there is no activity at this time, goodbye" and hang up.	
A. Dial 2452 on a plant extension (or dial 362-2452 if using a Southern Bell line)	"Hello"
B. Immediately enter 4357 followed by the "#" key.	"Enter the scenario number you wish to work with."
C. Enter the appropriate scenario number (from Section 1) followed by the "#" key.	"You entered XX. Is that correct? Please press 9 for yes, 6 for no."
D. Enter a '9'.	"The selected scenario is active. Press 1 to complete (stop) it, a 2 to suspend (temporarily stop) it, or press 3 to exit."
E. Enter a '1'	"You will complete the scenario XX, Are you sure this is what you want to do? Please press a 9 for yes, 6 for no."
F. Enter a '9'.	"The selected scenario has been completed, goodbye."
G. Hang up the phone (The system has been deactivated)	

Emergency Response Organization Activation - Pager System

NOTE: When pre-staffing the emergency response facilities is NOT desired, perform Unusual Event ERO notifications manually per PEP-310, Attachment 8.

1. Pager Code (Numeric Message) Determination:	
Select the appropriate classification level from the options below:	<u>Pager Codes</u>
<input type="checkbox"/> Unusual Event (pre-staffing of the facilities)	9999*1*1 ##
<input type="checkbox"/> Alert	9999*2*1 ##
<input type="checkbox"/> Site Area Emergency	9999*3*1 ##
<input type="checkbox"/> General Emergency	9999*4*1 ##

Classification Level	Code for "Response Required"	Completes call

2. Activating the Group Page:	
<u>Operator Action:</u>	<u>Proper System Response:</u>
A. From an outside line, dial 1-800-538-5388.	"Please enter the pager ID (number)."
B. Enter 123008	"Please enter your password after the tone."
C. Enter 8193.	"Please enter your numeric message after the tone."
D. After the three (3) beeps, enter the pager code determined in "1" above.	
E. Hang up.	
F. Record the time: _____	

Notification Call-Backs:
Call backs are not required, but if calls are received, notify individuals to report directly to their emergency facilities.
4. Completion:
Notification Completed: _____ (signature) (date/time)

Manual Emergency Response Organization Activation /UE Notification

Part A - Unusual Event Notification of Selected Personnel

NOTES: EPL-001, Emergency Phone List, contains home, work, and pager numbers for personnel filling ERO Positions.

The SEC may elect to notify personnel in addition to those listed below.

1. Contact the on-duty ERO member (refer to the Intranet EP Web site or EPL-001) in the following positions, and notify them of the event. If the on-duty person can not be contacted, contact any of the other ERO members in that position who are Fit For Duty (FFD).

<u>ERO Position/Facility</u>	<u>Person Contacted</u>	<u>Time</u>
Site Emergency Coordinator-TSC	_____	_____
Emergency Response Manager / EOF	_____	_____
Emergency Preparedness Advisor / EOF	_____	_____
Company Spokesperson / JIC	_____	_____

2. Contact and inform the NRC
Resident Inspector of the event.

3. Inform the SEC-CR of the results of the notification.

(Initials)

4. Sign for completion of ERO Notification of an Unusual Event

Notification Completed: _____
(signature) (date/time)

Manual Emergency Response Organization Activation /UE Notification

Part B - Manual Call-Out for Events Requiring Facility Activation

CAUTIONS

- Emergency notification messages shall be given only to the specified individuals and not to their spouse, children, baby-sitter, and so forth.
- If you encounter an answering machine, leave a message to call the plant with a phone number, but leave no emergency information.

1. Contact the on-duty ERO member in the listed in the table on the next page. Refer to Intranet EP Web site and the Emergency Phone List (EPL-001), Attachment 1, to obtain contact numbers for personnel in each of the ERO positions.	
a. If the on-duty person can not be contacted, contact any of the other ERO members in that position.	
b. Ask each individual if they are Fit For Duty (FFD).	
a) 1) If FFD, advise them of the event declaration and that this is a manual call out of the ERO.	
2) If the individual is <u>not</u> fit for duty, tell them a response is not required at this time, but to stay near their phone.	
2. If off-normal hours, contact on-shift personnel and provide them the following instructions:	
a. Maintenance; call in, as a minimum:	
• 3 additional Electrical/I&C techs	
• 2 additional Mechanics	_____
b. E&RC; call in, as a minimum:	
• 8 additional OSC RC Pool personnel	
• 4 additional EnMon Team personnel	
• 1 additional Chemistry Technician	_____
3. Contact and inform the NRC Resident Inspector of the event.	_____
4. Inform the SEC-CR of the results of the manual call-out	_____
5. Manual Call Out of ERO Completed: _____	_____
(signature)	(date/time)

Manual Emergency Response Organization Activation /UE Notification

Part B - Manual Call-Out for Events Requiring Facility Activation, continued

<u>MCR ERO Position</u>	<u>Person Contacted / ETA (min)</u>	<u>Time</u>
Plant Operations Director (in MCR)	_____	_____
<u>OSC ERO Positions</u>		
Emergency Repair Director	_____	_____
Damage Control Coordinator	_____	_____
Radiological Control Coordinator	_____	_____
Chemistry Coordinator	_____	_____
<u>TSC ERO Positions</u>		
Site Emergency Coordinator-TSC	_____	_____
Technical Analysis Director	_____	_____
TSC AAT - Core Performance	_____	_____
TSC AAT - Electrical	_____	_____
TSC AAT - Mechanical	_____	_____
Radiological Control Director	_____	_____
Communications Director	_____	_____
Security Director	_____	_____
<u>EOF ERO Positions</u>		
Emergency Response Manager	_____	_____
Emerg Preparedness Advisor	_____	_____
Communications Manager	_____	_____
Emerg Communicator-State/County	_____	_____
Radiological Control Manager	_____	_____
Dose Projection Team Leader	_____	_____
Technical Analysis Manager	_____	_____
News Coordinator	_____	_____
Administrative & Logistics Manager	_____	_____
<u>JIC ERO Positions</u>		
Company Spokesperson	_____	_____
JIC Director	_____	_____

MANUAL STATE/COUNTY EMERGENCY NOTIFICATION FORM

MESSAGE#

1. ☐ A. THIS IS A DRILL ☐ B. ACTUAL EMERGENCY ☐ INITIAL ☐ FOLLOW-UP*
2. Site: HARRIS PLANT Unit: 1 Reported by: _____
3. Transmittal Time/Date: _____ / _____ / _____ Confirmation Phone Number: _____
4. Authentication (If required): _____ (Number) _____ (Codeword)

5. Emergency Classification:

- ☐ A. NOTIFICATION OF AN UNUSUAL EVENT ☐ B. ALERT
- ☐ C. SITE AREA EMERGENCY ☐ D. GENERAL EMERGENCY

6. ☐ A. Emergency Declaration at: ☐ B Termination at: Time/Date: _____ / _____ / _____ (If B, go to 16)

7. Emergency Description/Remarks: (EAL - - -) _____

8. Plant Condition: ☐ A. Improving ☐ B. Stable ☐ C. Degrading
9. Reactor Status: ☐ A. Shutdown: Time/Date: _____ / _____ / _____ ☐ B. _____ % Power
10. Emergency Releases: ☐ A. None (go to 14) ☐ B. Potential (go to 14)
☐ C. Is Occurring ☐ D. Has Occurred

**11. Type of Release: ☐ Elevated ☐ Ground Level

- ☐ A. Airborne Started: _____ / _____ / _____ Stopped: _____ / _____ / _____
 Time Date Time Date
- ☐ B. Liquid Started: _____ / _____ / _____ Stopped: _____ / _____ / _____
 Time Date Time Date

..12. Release Magnitude: ☐ Curies/sec ☐ Curies Normal Operating Limits: ☐ Below ☐ Above

- ☐ A. Noble Gases _____ ☐ B. Iodines _____
- ☐ C. Particulates _____ ☐ D. Other _____

..13. Estimate of Projected Offsite Dose: ☐ New ☐ Unchanged Projection Time: _____
 Estimated Duration: _____ Hrs

	TEDE mrem	Thyroid CDE mrem
Site Boundary	_____	_____
2 Miles	_____	_____
5 Miles	_____	_____
10 Miles	_____	_____

..14. Meteorological Data:

- ☐ A. Wind Direction(from) _____ ☐ B. Speed (mph) _____ ☐ C. Stability Class _____ ☐ D. Precipitation (type) _____

15. RECOMMENDED PROTECTIVE ACTIONS:

- ☐ A. No recommended Protective Actions
- ☐ B. Evacuate _____
- ☐ C. Shelter In-place _____
- ☐ D. Other _____

16. Approved By: _____ (Name) _____ (Title) Time/Date: _____ / _____ / _____

* If items 8-14 have not changed,
 only items 1-7 and 15-16 are required to be completed.

** Information may not be available on Initial Notifications

S/C
 Use
 Only

Received By: _____ Time: _____ Date: _____

Transmitted By: _____

STATE/COUNTY NOTIFICATION FORM INSTRUCTIONS

To Use ERFIS/RTIN to Perform Notifications:

NOTE: If limited access to ERFIS terminals, it may be helpful to obtain meteorological data prior to bringing up the notification form.

1. Select or enter the Turn-on-Code(TOC) **EP** "EMERGENCY PREPAREDNESS FUNCTION MENU" from the ERFIS Main Menu.
2. Select or enter TOC **LOGIN** "LOG INTO NETWORK DATABASE" to sign on to the system.
3. Select your ERO position from the Position Menu, type in your name, and select login.
4. Select or enter TOC **EVENT** "DECLARE EVENT"(if an event has not previously been declared on RTIN) and select O.K.
5. Select or enter TOC **EFORM** "EMERGENCY NOTIFICATION FORM" from the menu.

Form Completion Guidelines:

Line
NO.

INSTRUCTION

All Marking of a block on the notification form should be done clearly, such as by diagonally shading ½ of the block (☒) when filling out manually (or by checking the block when using RTIN).

1. Mark the form as '**A**' **DRILL** or '**B**' **ACTUAL EMERGENCY**.

Mark **INITIAL** for

- The first message for the declared emergency classification level (either upgrade or downgrade).
- A change in Protective Action Recommendations.

Mark **FOLLOW-UP** if this is not the first message for the declared emergency classification level.

Assign a numerical message number.

- The first notification is message number 1.
- Each subsequent message is numbered sequentially.
- The message number does not begin again at 1 for any reason during the course of the declared event.
- Numbering of forms will be done automatically in ERFIS if you select "ADD".

STATE/COUNTY NOTIFICATION FORM INSTRUCTIONS

Form Completion Guidelines (continued):

**Line
NO.**

INSTRUCTION

2. Record the name of the person who will be reading the message to the State & County personnel in the **REPORTED BY** space.
3. **TRANSMITTAL TIME/DATE** is not filled until message transmittal (If using ERFIS, this will be done automatically).

In the **CONFIRMATION PHONE NO.** blank, record a direct Bell Line phone number that off-site agencies could use for verification that this message is authentic.
4. **AUTHENTICATION** is not filled out until the message is being communicated.
5. Mark the form with the applicable **EMERGENCY CLASSIFICATION LEVEL**

If the event has been upgraded or downgraded prior to completion of the off-site notification form, do not transmit old information. Complete a new notification form or modify the existing form to reflect current conditions.

However, if the event has been terminated prior to completion of the off-site notification form, mark the highest emergency classification level that existed and refer to item 6 below.

For a "termination" message, leave Item 5 blank.

For Follow-up messages, indicate the same classification as the previous message.
6. Mark the form with '**A**' **EMERGENCY DECLARATION AT** unless this is a termination message.

Mark the form with '**B**' **TERMINATION AT** for a termination message.

Indicate the time and date that the emergency classification was declared or terminated.

If the event has been terminated prior to completion of the off-site notification form, mark both '**A**' and '**B**' and indicate both the start and stop time of the event.

STATE/COUNTY NOTIFICATION FORM INSTRUCTIONS

Form Completion Guidelines (continued):

Line
NO. **INSTRUCTION**

7. Record the 'EAL Reference Number _____' and a short narrative of the event, using layman's terms, in the **EMERGENCY DESCRIPTION REMARKS**. Any of the following items should also be included:

- Estimate of any surface radioactive contamination in plant, on site or off site.
- HNP emergency response actions underway (for example, evacuation of site personnel).
- Any requests for assistance (for example, Rescue, Fire or Sheriff).

If the event is being terminated describe the bases for the termination.

If the event has been downgraded prior to completion of the previous off-site notification form, then record:

- The start and stop times that the higher classification level existed.
- The EAL for the higher classification level.
- The mitigating conditions that caused the classification level to be downgraded.

If the event has been terminated prior to completion of the previous off-site notification form, then record reason for the event and the reason for the termination.

8. Mark **PLANT CONDITION** as appropriate.

Termination messages do not require Item 8 to be filled in.

- **'A' IMPROVING**
- **'B' STABLE**
- **'C' DEGRADING**

9. Mark **REACTOR STATUS** as follows:

Termination messages do not require Item 9 to be filled in.

- Mark **'A' SHUTDOWN** if the reactor is shutdown and indicate the time and date, if applicable.

Enter "N/A" for the time and date of shutdown if the reactor is at power.

- Mark **'B' POWER** if the reactor is at power and record the current reactor power level.

Enter "N/A" for the power level if the reactor is shutdown.

STATE/COUNTY NOTIFICATION FORM INSTRUCTIONS

Form Completion Guidelines (continued):

Line

NO. **INSTRUCTION**

10. Mark **EMERGENCY RELEASE(S)** as appropriate:

NOTE: Emergency Release is defined as ANY radioactive release which is a result of, or associated with, the event.

- Mark '**A** **NONE** if no Emergency Release is occurring or has occurred.
- Mark '**B** **POTENTIAL** if no release is occurring but the potential for a release exists (for example, an RCS leak into containment with the Containment fission product barrier in a "Jeopardy" condition, or based on plant data a trend predicts the final barrier will be breached and there are no systems capable of mitigating the trend).
- Mark '**C** **IS OCCURRING** if an Emergency Release is occurring (for example, any SG tube leak, RCS leak outside containment, or fuel handling accident that results in a declared emergency is to be reported as an "Emergency Release.") A detectable Radiation Monitor reading increase is not required for a release to exist.
- Mark '**D** **HAS OCCURRED** for Emergency Releases which have occurred but are now terminated.

11. Mark **TYPE OF RELEASES** as '**B** **GROUND LEVEL** for all Emergency Releases.

Item 11 may be skipped if either 'none' or 'potential' were selected for emergency release.

For initial notifications, the remaining information for Item 11 may not be available. If this is the case, leave it blank.

- Mark '**A** **AIRBORNE** for an airborne release.

Indicate the time and date for the release start and stop.

If the release is in progress at the time of this notification, enter "N/A" for stop time.

- Mark '**B** **LIQUID** for an liquid release.

Indicate the time and date for the release start and stop.

If the release is in progress at the time of this notification, enter "N/A" for stop time.

STATE/COUNTY NOTIFICATION FORM INSTRUCTIONS

Form Completion Guidelines (continued):

Line
NO. **INSTRUCTION**

12. Mark **RELEASE MAGNITUDE** as appropriate:

This information may not be available for initial notifications.

Item 12 may be skipped if either 'none' or 'potential' were selected for emergency release.

- Mark '**A**' **CURIES/SEC**
- Mark '**B**' **CURIES**

Mark **NORMAL OPER. LIMITS** based on whether the release is below or above Technical Specification limits.

- Mark '**C**' **BELOW**
- Mark '**D**' **ABOVE**

Mark '**A**' **NOBLE GASES** and record magnitude in Curies or Curies/sec, if applicable.

Mark '**B**' **IODINES** and record magnitude in Curies or Curies/sec, if applicable.

Mark '**C**' **PARTICULATES** and record magnitude in Curies or Curies/sec, if applicable.

Mark '**D**' **OTHER** as N/A, not applicable to the Harris Plant.

13. Mark **ESTIMATE OF PROJECTED OFF-SITE DOSE** as appropriate:

This information may not be available for initial notifications.

Item 13 may be skipped if no emergency release has occurred.

- Mark '**A**' **NEW** if this is the first dose projection or if the release/release rate has changed significantly (approximately 15%).
- Mark '**B**' **UNCHANGED** if no new projection is available.

Enter **PROJECTION TIME** with the time the dose projection data was obtained.

Enter **ESTIMATED DURATION** with the time, in hours, of a potential or on going release.

Enter the **TEDE** and **THYROID CDE** doses in mrem. DO NOT change the units on the form.

STATE/COUNTY NOTIFICATION FORM INSTRUCTIONS

Form Completion Guidelines (continued):

Line
NO.

INSTRUCTION

14. Enter **METEOROLOGICAL DATA** as appropriate:
This information may not be available for initial notifications.
- Mark **'A' WIND DIRECTION** and enter the direction in degrees from.
 - Mark **'B' SPEED** and enter the wind speed in MPH.
 - Mark **'C' STABILITY CLASS** and enter the appropriate stability as 'A' - 'G'.
 - Mark **'D' PRECIPITATION** and enter 'RAIN' or 'SNOW' or 'SLEET' if any precipitation has occurred within the last 15 minutes.
15. Mark **RECOMMENDED PROTECTIVE ACTIONS** as appropriate per PEP-110.
- Mark **'A' NO RECOMMENDED PROTECTIVE ACTIONS** Unless a General Emergency has been declared.
 - Mark **'B' EVACUATE** if a General Emergency has been declared and enter each of the subzones for which this recommendation applies (for example, A,B,C,D, and so forth).
 - For **'C' SHELTER IN-PLACE** if a General Emergency has been declared, enter the remaining subzones which were not entered for evacuate.
 - **'D' OTHER** is not applicable to HNP. Areas beyond 10 miles will be considered only on an ad-hoc basis and will be directly communicated with the offsite agencies through the ERM.
16. **APPROVED BY** - Obtain approval from the Site Emergency Coordinator (SEC) or Emergency Response Manager (ERM) prior to transmittal of the notification to the state and counties.
- If using ERFIS,
 - Electronically enter name, title, time and date of approval.
 - The SEC or ERM shall sign the form near the printed name (this is not required prior to transmission of the notification).
 - If manually preparing the form, obtain signature, title, time and date.

NOTE: Transmittal Time/Date and authentication in Items 3 and 4 will be filled in following approval of the form. Any other changes made to the information after approval must be initialed by the SEC or ERM as applicable.

State/County Notification Checklist-ERFIS Method

NOTE: If the Selective Signaling phone is inoperable, use the normal telephone system. If both phone systems fail use the UHF State frequency radio in the TSC or EOF (State and Wake WP do not have a radio).

1. Contacting the Offsite Authorities:

A. Obtain the **verification code words** from the following storage locations:

1. Emergency Communicator's position notebook in the Main Control Room (MCR).
2. Key locker at the Auxiliary Control Panel (ACP).
3. EOF supply cabinet.

NOTE: If you do not hear a tone, a conference network may already be established.

B. Using the Selective Signaling System, **dial '10'** and listen for a tone.

C. At the tone, perform one of the following:

- ☐ Dial **22** to contact the **Warning Points** (normally used by the MCR).
- ☐ Dial **33** to contact the State and County **EOCs** (commonly used by the EOF).
- ☐ Dial **44** to contact **all Warning Points and EOCs** (during EOC activation, as requested).

D. Wait for the initial response and say: **"This is the Harris Nuclear Plant, stand by."**

E. After the responses cease, say: **"This is Harris Nuclear Plant, answer to roll call,"**

- ☐ **"State"** (Pause for response).
- ☐ **"Chatham County"** (Pause for response).
- ☐ **"Harnett County"** (Pause for response).
- ☐ **"Lee County"** (Pause for response).
- ☐ **"Wake County"** (Pause for response).

F. If one or more organizations did not respond to roll call:

1. Say **"Standby while I re-dial the missing location(s)"**
2. Re-enter the appropriate 2 digit code from step "C" above.
3. Repeat the roll call for the missing locations.

G. If a location(s) still does not respond, request an assistant to contact the missing organization(s) by phone (see EPL-001) and read the message to them.

H. Continue with the locations that are on the line.

2. For Initial Notifications (15 minute notification requirements):

A. Say **"This is the Harris Nuclear Plant, Emergency Notification number _____ was sent via fax. A _____ has been:**
(state the classification level)

- **declared"; - or -**
- **remains in effect"**

B. Say **"Refer to line 15 of your notification form"** and then report the PARs as listed.

C. Record the current time and date (24 hour clock) ____/____.

(Continued on next page)

State/County Notification Checklist-ERFIS Method

3. Communicate contents of notification form:

- A. If not done in step 2, say
"This is the Harris Nuclear Plant. A _____ continues to be in effect".
 (state the classification level)
- B. **"Please confirm that a legible copy of the notification form has been received."**
- C. If any one responds that they are having difficulty reading the faxed notification form, read it over the line.
- D. Print and provide your name on line 2 of the form for "Reported By:"
- E. Say **"State; please supply an authentication number"**
- F. Respond with the corresponding word from the list of verification code words.
- G. Record the authentication information on the form (line 4).
- H. Say **"are there any questions?"**
- I. If necessary, correct any errors or clarify misunderstood information.

4. Completion:

- A. Say **"respond to roll call with your name."**, call roll and record the information below. Identify the applicable location for each agency (WP is not used for notification/communication after EOC is activated).

<u>Agency:</u>	<u>WP:</u>	<u>EOC:</u>	<u>Name of Person Contacted:</u>
State			
Chatham County			
Harnett County			
Lee County			
Wake County.			

- B. When completed, say **"This is the end of the emergency notification. You may leave the network. This is the Harris Nuclear Plant, out."**
- C. If performed from the MCR, fax the Emergency Notification Form to the TSC and the EOF.
- D. If telecommunications problems were encountered, notify the Help Desk (refer to EPL-001)
- E. State/County Notification Completed: _____
 (signature) (date/time)

State/County Notification Checklist - Manual Method

NOTE: If the Selective Signaling phone is inoperable, use the normal telephone system or the UHF State frequency radio in the TSC or EOF.

1. Contacting the Offsite Authorities:

- A. Obtain the **verification code words** from the following storage locations:
1. Emergency Communicator's position notebook in the Main Control Room (MCR).
 2. Key locker at the Auxiliary Control Panel (ACP).
 3. EOF supply cabinet.
- NOTE:** If you do not hear a tone, a conference network may already be established.
- B. Using the Selective Signaling System, **dial '10'** and listen for a tone.
- C. At the tone, perform one of the following:
- ☐ Dial **22** to contact the **Warning Points** (normally used by the MCR).
 - ☐ Dial **33** to contact the State and County **EOCs** (commonly used by the EOF).
 - ☐ Dial **44** to contact **all Warning Points and EOCs** (during EOC activation, as requested).
- D. Wait for the initial response and say: **"This is the Harris Nuclear Plant, stand by."**
- E. After the responses cease, say: **"This is Harris Nuclear Plant, answer to roll call,"**
- ☐ **"State"** (Pause for response).
 - ☐ **"Chatham County"** (Pause for response).
 - ☐ **"Harnett County"** (Pause for response).
 - ☐ **"Lee County"** (Pause for response).
 - ☐ **"Wake County"** (Pause for response).
- F. If one or more organizations did not respond to roll call:
1. Say **"Standby while I re-dial the missing location(s)"**
 2. Re-enter the appropriate 2 digit code from step "C" above.
 3. Repeat the roll call for the missing locations.
- G. If a location(s) still does not respond, request an assistant to contact the missing organization(s) by phone (see EPL-001) and read the message to them.
- H. Continue with the locations that are on the line.

2. For Initial Notifications (15 minute notification requirements):

- A. Say **"This is the Harris Nuclear Plant, Please record the following information on an Emergency Notification Form."** (pause to allow the locations to retrieve a form).
- B. Say **"Line 1, (Read each checked item) , Emergency Notification number _____"**
- C. Say **"Line 5, a _____ has been:**
(state the classification level)
- **declared"; - or -**
 - **remains in effect."**
- D. Say **"Line 15"** and then report the PARs as listed.
- E. Record the current time and date (24 hour clock) _____/_____.

(Continued on next page)

State/County Notification Checklist - Manual Method

3. Communicate contents of notification form:

- A. If not done in step 2, say
"This is the Harris Nuclear Plant. A _____ continues to be in effect".
(state the classification level)
- B. **"Please record the following information on an Emergency Notification Form."**
(pause to allow the locations to retrieve a form).
- C. Read the form to the responding locations as follows:
1. Identify each line by number before communicating the content.
 2. Spell difficult words.
 3. Print and provide your name on line 2 of the form for "Reported By:"
 4. When you get to line 4, say **"State; please supply an authentication number"**
 5. Respond with the corresponding word from the list of verification code words.
 6. Record the authentication information on the form (line 4).
 7. Complete reading the remainder of the form.
- D. Say **"are there any questions?"**
- E. If necessary, correct any errors or clarify misunderstood information.
- F. Say **"Copies of this notification will be sent to you via Fax."**

4. Completion:

- A. Say **"respond to roll call with your name."**, call roll and record the information below.
Identify the applicable location for each agency (WP is not used for notification/communication after EOC is activated).

<u>Agency:</u>	<u>WP:</u>	<u>EOC:</u>	<u>Name of Person Contacted:</u>
State			
Chatham County			
Harnett County			
Lee County			
Wake County.			

- B. When completed, say **"This is the end of the emergency notification. You may leave the network. This is the Harris Nuclear Plant, out."**
- C. Fax a copy of the Emergency Notification Form to the applicable WPs and/or EOCs.
- D. If performed from the MCR, fax the Emergency Notification Form to the TSC and the EOF.
- E. If telecommunications problems were encountered, notify the Help Desk (refer to EPL-001)
- F. Manual State/County Notification Completed: _____
(signature) (date/time)

INPO/ANI NOTIFICATION FORM

☐ **Institute of Nuclear Power Operations (INPO)**

☐ **American Nuclear Insurers (ANI)**

1. "This is _____ from Carolina Power & Light at the Harris Nuclear Plant,
(name of caller)

telephone number 919-362-_____, concerning Unit One."
(call back number)

2. ☐ This is a drill. ☐ This is an actual emergency.

3. Emergency Classification:

☐ Alert ☐ Site Area Emergency ☐ General Emergency

Basis: _____

4. Current Plant Conditions/Additional Information _____

5. Notification Authorized: _____
(ERM signature) (date/time)

6. Name of person notified: (INPO) _____
(ANI) _____

7. Notification Completed: _____
(signature) (date/time)

PLANT PARAMETER INFORMATION FORM

Date: _____ **Time:** _____

FUEL STATUS:	
1. GFFD	CPM
2. RCS Activity Sample	_____ (time) _____ $\mu\text{Ci/ml}$
3. RCS I-131 DE Sample	_____ (time) _____ $\mu\text{Ci/ml}$
4. Core Exit Temp	_____ $^{\circ}\text{F}$

REACTOR COOLANT SYSTEM (RCS) STATUS	
1. Reactor Power (PR)	_____ %
2. Reactor Power (IR)	(SUR) _____ DPM Amps
3. Reactor Power (SR)	(SUR) _____ DPM CPS
4. RCS Pressure	_____ PSIG
5. PRZ Level	_____ %
6. Average Temperature	_____ $^{\circ}\text{F}$
7. RCS Loop A	T_{hot} _____ $^{\circ}\text{F}$ T_{cold} _____ $^{\circ}\text{F}$ ΔT _____ $^{\circ}\text{F}$
8. RCS Loop B	T_{hot} _____ $^{\circ}\text{F}$ T_{cold} _____ $^{\circ}\text{F}$ ΔT _____ $^{\circ}\text{F}$
9. RCS Loop C	T_{hot} _____ $^{\circ}\text{F}$ T_{cold} _____ $^{\circ}\text{F}$ ΔT _____ $^{\circ}\text{F}$
10. Subcooling	_____ $^{\circ}\text{F}$
11. Charging Flow	_____ GPM
12. Letdown Flow	_____ GPM
13. SI Flow	_____ GPM
14. Boron Concentration (Sample)	_____ (time) _____ PPM
15. RVLIS (Dynamic/Full/Upper)	_____ %
16. RCS Leakage	_____ GPM
17. RCPs Operating	(A / B / C)

PROVIDE DATA FOR BLANKS

CIRCLE THE CORRECT OPTION, OR LINE THROUGH OTHERS

ABBREVIATIONS AND SYMBOLS:

INOPERABLE ISOLATED NA = NOT APPLICABLE

▲ = OFF SCALE HIGH ▼ = OFF SCALE LOW

CONTAINMENT STATUS:	
1. Phase A - All Isolated	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. CVI - All Isolated	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Cnmt. Pressure (WR)	_____ PSIG
4. Cnmt. Temperature	_____ $^{\circ}\text{F}$
5. Hydrogen Concentration	_____ %
6. Sump Level	_____ %
7. RWST Level	_____ %
8. Spray Add. Tank Level	_____ %

SECONDARY SYSTEMS STATUS	
1. Main Steam Flow:	
A. FI-474	_____ MPPH
B. FI-484	_____ MPPH
C. FI-494	_____ MPPH
2. Main Feedwater Flow:	
A. FI-476	_____ MPPH
B. FI-486	_____ MPPH
C. FI-496	_____ MPPH
3. Aux. Feedwater Flow:	
A. FI-2050A	_____ KPPH
B. FI-2050B	_____ KPPH
C. FI-2050C	_____ KPPH
4. Steam Generator Press.:	
A. PI-476	_____ PSIG
B. PI-486	_____ PSIG
C. PI-496	_____ PSIG
5. Steam Generator Levels:	
Wide Range A	_____ %
B	_____ %
C	_____ %
Narrow Range A	_____ %
B	_____ %
C	_____ %
6. SG Safety(s) Open	_____ Number (A / B / C)
7. SG PORV(s) Open	(A / B / C)
8. Primary - Sec. Leakage	_____ GPM

AC ELECTRICAL POWER:	
1. A-SA AC Bus Voltage	_____ V AC
2. B-SB AC Bus Voltage	_____ V AC

DC ELECTRICAL POWER:	
1. A-SA DC Bus Voltage	_____ V DC
2. B-SB DC Bus Voltage	_____ V DC

PLANT PARAMETER INFORMATION FORM

Date: _____ Time: _____

CSFST STATUS:

CSF-1 Subcriticality	(Red/Orange/Yellow/Green)
CSF-2 Core Cooling	(Red/Yellow/Green)
CSF-3 Heat Sink	(Red/Orange/Yellow/Green)
CSF-4 RCS Integrity	(Red/Orange/Yellow/Green)
CSF-5 Containment	(Red/Orange/Yellow/Green)
CSF-6 RCS Inven.	(Yellow/Green)

SEISMIC CONDITIONS:

1. "SEISMIC MON OBE EXCEEDED" Alarm	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. White Event Indicator on SMA Control Panel	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Alarm at Triaxial Spectrum Annunciator	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Noticeable Tremors	<input type="checkbox"/> Yes <input type="checkbox"/> No

METEOROLOGICAL CONDITIONS:

1. Wind Speed (lower)	MPH
2. Wind Direction (lower)	Deg
3. Stability Class	

SPENT FUEL POOL SYSTEMS:

1. Unit 1 New Fuel Pool Level	Ft.
2. Unit 1 Spent Fuel Pool Level	Ft.

PROVIDE DATA FOR BLANKS

CIRCLE THE CORRECT OPTION, OR LINE THROUGH OTHERS

ABBREVIATIONS AND SYMBOLS:

INOPERABLE ISOLATED NA = NOT APPLICABLE

▲ = OFF SCALE HIGH ▼ = OFF SCALE LOW

ESF Equipment Out Of Service: _____

RADIATION MONITORS:

Effluent Monitors:

1. CNMT Leak Det	REM-1LT-3502-SA	μCi/ml
2. CNMT Hi Range	REM-1CR-3589-SA	R/hr
3. CNMT Hi Range	REM-1CR-3590-SB	R/hr
4. PVS 1 WRGM Effl.	RM-21AV-3509-1SA	μCi/sec
5. PVS 1 WRGM (L/M/H)	RM-21AV-3509-1SA	μCi/ml
6. TB Stk 3 WRGM Effl.	RM-1TV-3536-1	μCi/sec
7. TB Stk 3 WRGM (L/M/H)	RM-1TV-3536-1	μCi/ml
8. CVPETS	REM-1TV-3534	μCi/ml

Main Steam Line Monitors:

1. MSL A	RM-1MS-3591-SB	mR/hr
2. MSL B	RM-1MS-3592-SB	mR/hr
3. MSL C	RM-1MS-3593-SB	mR/hr

Fuel Breach Monitors:

1. VCT Area	RM-1RR-3595	mR/hr
2. CSIP A Area	RM-1RR-3599A	mR/hr
3. CSIP B Area	RM-1RR-3599B	mR/hr
4. CSIP C Area	RM-1RR-3599C	mR/hr
5. BRS Hx Area	RM-1RR-3600	mR/hr
6. Ltn Hx Area	RM-1RR-3601	mR/hr
7. Mod Hx Area	RM-1RR-3602	mR/hr

Waste Process. Bldg. Radiation Monitors:

1. Stack 5 WRGM Eff	RM-1WV-3546-1	μCi/sec
2. Stk 5 WRGM (L/M/H)	RM-1WV-3546-1	μCi/ml
3. Stack 5A WRGM Eff	RM-1WV-3547-1	μCi/sec
4. Stk 5A WRGM(L/M/H)	RM-1WV-3547-1	μCi/ml
5. TL&HS Disch	RM-1WL-3540	μCi/ml
6. SWTS Disch	RM-21WS-3542	μCi/ml
7. WMT Disch	REM-1WL-3541	μCi/ml
8. Turbine Bldg Drain	REM-1WL-3528	μCi/ml

Fuel Handling Bldg. Radiation Monitors:

1. SFP South (Highest)	RM-1FR-3564A-SA	mR/hr
2. SFP South (Highest)	RM-1FR-3564B-SB	mR/hr
3. SFP South (Highest)	RM-1FR-3565A-SA	mR/hr
4. SFP South (Highest)	RM-1FR-3565B-SB	mR/hr
5. SFP North (Highest)	RM-1FR-3566A-SA	mR/hr
6. SFP North (Highest)	RM-1FR-3566B-SB	mR/hr
7. SFP North (Highest)	RM-1FR-3567A-SA	mR/hr
8. SFP North (Highest)	RM-1FR-3567B-SB	mR/hr

Revision Summary PEP-310 Rev.12

This revision to PEP-310 adds a four digit password to the Pager System (Att 7) activation. The pager activation is a 2nd tier method for activating the ERO after the failure of the Dialogic System. The addition of the password is designed to reduce the incidents of inadvertent activation. Other Metrocall customers use the same 1-800 number and PIN number. Several inadvertent activation's have occurred as a result of other Metrocall customers misdialing the PIN number and activating the ERO pagers. The change was made to provide an additional barrier to the ERO Group page and therefore to reduce the likelihood of inadvertent actuation incidents of the ERO Group Call and increase reliability of the system.

<u>Page/Section:</u>	<u>Revision Description:</u>
-----------------------------	-------------------------------------

Att 7 2.	Added an additional barrier to activate the pager system by adding a four digit password. Added 1 to 1-800
----------	---

CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
PLANT OPERATING MANUAL
VOLUME 2
PART 5

PROCEDURE TYPE: Plant Emergency Procedure
NUMBER: PEP-340
TITLE: Dose Assessment

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1.0 PURPOSE

The purpose of this procedure is to provide guidance for performing offsite radiological dose assessments during an emergency at the HNP. The HNP Dose Assessment and Protective Action Recommendation (DAPAR) program is designed to be used in conjunction with this procedure.

2.0 INITIATING CONDITIONS

1. An emergency has been declared.
2. Events require the projection of offsite doses due to an actual or potential release of radioactive materials.

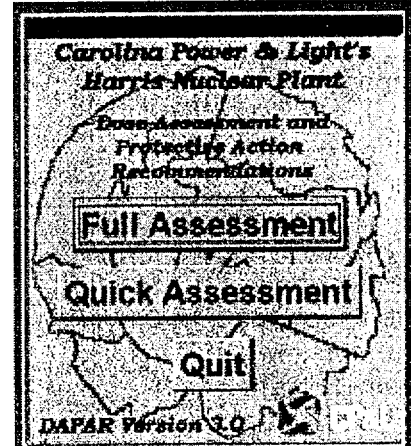
3.0 PROCEDURE STEPS

CAUTION

Use of DAPAR to project doses based on normal plant readings would indicate offsite doses many magnitudes higher than actual offsite doses. Care should be taken in making a Protective Action Recommendation based on program output if there are no indications of Core Damage.

3.1 Start Up

1. Start the computer.
2. Ensure no other programs are running.
3. Start DAPAR program – A shortcut icon labeled DAPAR v 3.0 should be located on the desktop, if not locate the program on the Y:\ Access Databases, Shared, Dose Assessment.
4. If the assigned Dose Assessment Computer does not operate or the DAPAR program will not run, use another Dose Assessment Computer if available or install the program on any computer from CDs or Disks located in Emergency Communicator's Desk in the Control Room or the Dose Projection Cabinet in the EOF
5. Verify Rev. 3.0 of the DAPAR program is in use.



3.2 ERFIS Data

Obtain monitored release path information by accessing ERFIS Group Display 3DOSE.

3.3 Basic Program Flow Diagram

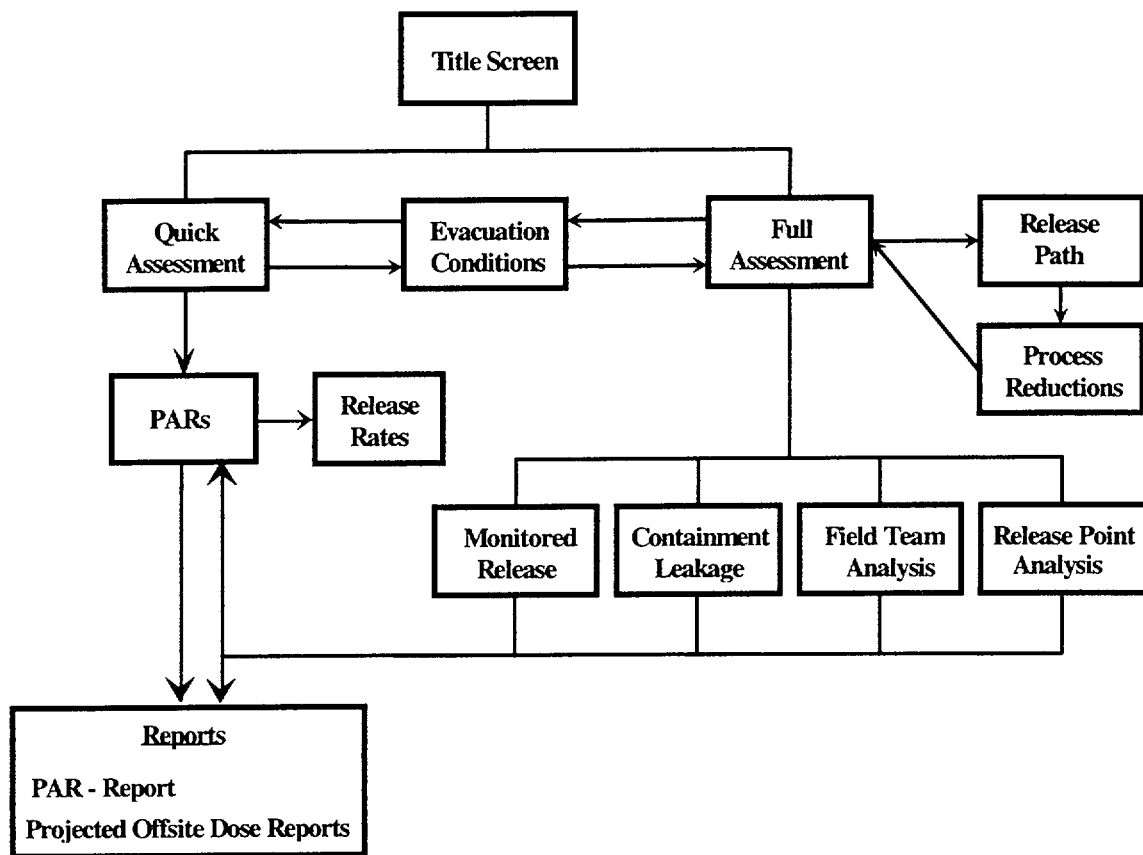


Diagram shows basic tasks which can be performed by the program and how user would maneuver between them.

3.4 Title Screen

The title screen shows the application version and offers the user three options to direct program flow

1. **Quick Assessment**
This option is designed to be used by the Control Room. It performs assessments based on design basis default source terms.
2. **Full Assessment**
This option is designed to be used by the Dose Assessment Staff in the EOF. It allows user more options in performing calculations
3. **Quit**
Exits the Program.

3.4 Title Screen (continued)

NOTE: Once the User selects "Quick Assessment" or "Full Assessment" returning to the Title screen will reset all program values.

4. User should now go to:
 - a. Section 3.5 for Quick Assessment.
 - b. Section 3.7 for Full Assessment.

3.5 Quick Assessment

The Quick Assessment operations and calculations are identical to the Full Assessment method for a monitored release, but utilize default release path and core damage assumptions for the determination of offsite doses. This allows for a rapid assessment from the Main Control Room.

Quick Assessment		
Monitor Information	Relief Inputs	Meteorological Data
<input type="radio"/> Plant Vent	S/G Press: <input type="text" value="800"/>	Wind Speed (MPH): <input type="text" value="1.0"/>
<input type="radio"/> Turbine Building Vent	SRVs Open: <input type="text" value="0"/>	Wind Direction (From): <input type="text" value="002"/>
<input type="radio"/> WP Building Stack 5	PORV Open: <input type="checkbox"/>	Stability Class (A-G): <input type="text" value="D"/>
<input type="radio"/> WP Building Stack 5a		
<input checked="" type="radio"/> Main Steam Line		
Reading (mR/hr): <input type="text" value="2.00E+02"/>	Time After Rx S/D	<input type="button" value="Conditions"/> Max ETE: <input type="text" value="3:25"/>
	(hh:mm) <input type="text" value="3:00"/>	Release Duration (h:mm): <input type="text" value="3:25"/>
		<input type="button" value="PAFs"/> <input type="button" value="Back"/>

1. Select **Monitor Information** – User chooses the appropriate monitor from the listed Monitors.
 - a. Plant Vent – this is stack #1, the value for the reading of this monitor is provided at computer point RAV3509H. It reads out in $\mu\text{Ci/sec}$.
 - b. Turbine Building Vent – this is stack #3, the value for the reading of this monitor is provided at computer point RTV3536D. It reads out in $\mu\text{Ci/sec}$.
 - c. WP Building Vent 5 – the value for the reading of this monitor is provided at computer point RWV3546H. It reads out in $\mu\text{Ci/sec}$.
 - d. WPB Building Vent 5A – the value for the reading of this monitor is provided at computer point RWV3547H. It reads out in $\mu\text{Ci/sec}$.

3.5 Quick Assessment (continued)

- e. Main Steam Line – The Main Steam Line radiation monitors are used for this release point. The computer points for these monitors are RMS3591A, RMS3592A, and RMS3593A. Since these monitors read out in mR/hr a flow has to be determined to calculate the $\mu\text{Ci/sec}$ release rate. This is accomplished by entering the steam pressure and the number of relief valves that are open in the section labeled “Relief Inputs”.
2. Input **Reading** Information – Enter the appropriate monitor reading in $\mu\text{Ci/sec}$ or mR/hr.
3. Input **Time After Rx S/D** (Shutdown) Information – Enter the time since the reactor was shutdown in hours and minutes (hh:mm).

NOTE: If Met Tower data is unavailable, another source of meteorological data, such as the National Weather Service or a local TV or Radio broadcast station may be used and the stability class can be estimated.

4. Input **Meteorological Data** – Enter the appropriate data from plant instruments as follows:
 - a. Wind Speed (MPH) – Obtain the Lower Wind Speed from the ERFIS computer (Point MMT1008) or the Control Room.
 - b. Wind Direction (From) – Obtain the Lower Wind Direction from the ERFIS computer (Point MMT1014) or the Control Room.
 - c. Stability Class (A-G AND 1-7) – Obtain the stability class from the ERFIS computer (MMT1017) or the Control Room.

Stability Classes:

A	1	Extremely unstable conditions
B	2	Moderately unstable conditions
C	3	Slightly unstable conditions
D	4	Neutral conditions
E	5	Slightly stable conditions
F	6	Moderately stable conditions
G	7	Extremely stable conditions

3.5 Quick Assessment (continued)

- d. If the stability class is not available use the following table to choose the appropriate value:

Surface Wind Speed (mph)	Daytime Solar Radiation (For moderate cloud cover move one column to the right)			Nighttime Conditions		Day or Night
	Summer/ Clear Sky	Spring & Fall Clear Sky	Winter	Thin overcast ($>1/2$ cloud cover)	$<3/8$ cloud cover	
	A	A-B	B			D
0.0 to 9.0	A-B	B	C	E	F	D
9.0 to 13.5	B	B-C	C	D	E	D
> 13.5	C	C-D	D	D	D	D

NOTE: The conditions Good or Adverse in the following step are in relation to the weather. Adverse is heavy rain or any other condition which would hinder the flow of traffic.

5. **Set Evacuation Conditions**
Click on the "Conditions" button to select the appropriate conditions for the program to calculate the Maximum Evacuation Time Estimate (ETE). Once the user sets the evacuation conditions the program will place the Max ETE value in the "Release Duration" and "Max ETE" text boxes.

Weather Conditions

Conditions:
☒ Good
☐ Adverse

Time of Day:
☒ Daytime [6AM - 6PM]
☐ Evening [6PM - 6AM]

Time of Week:
☒ Weekday
☐ Weekend/Holiday

OK

6. If the **Release Duration** is known, change the displayed time to the known release duration. If a good estimate of the release duration can not be determined use the default value entered by the program.
7. Click the **PARs** button – The program will calculate the downwind doses based on user inputs and display the Protective Action Recommendation form.

3.6 Protective Action Recommendations

1. The Protective Action Recommendation (PAR) form displays a summary of the downwind dose projections with a map showing which Subzones in which the Protective Actions Guidelines (PAGs) are exceeded (grayed areas). Additional evaluation of the affected subzones would be made using PEP-110 Attachment 3.

Protective Action Recommendation

Assessment Method:
Monitor Reading (Quick)

Evacuation Conditions:
Adverse

Stability Class:

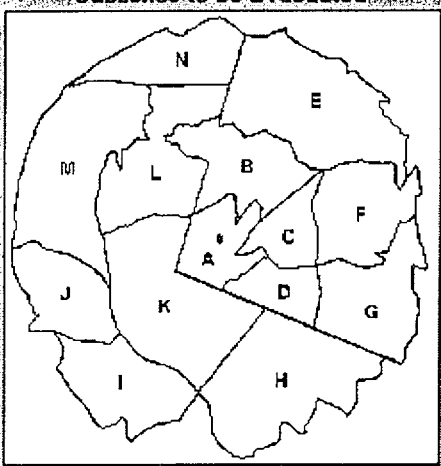
Wind Direction (from):

Wind Speed (mph):

Release Duration:

RRs

Subzones to be Evacuated



	Affected Subzones	(Dose in rem)	TEDE	CDE Thy
SB	A	No Protection: 2.47E-04 Sheltered: 2.21E-04	5.98E-05 2.88E-05	
2 Miles	B, C	No Protection: 2.05E-05 Sheltered: 1.83E-05	4.97E-06 2.40E-06	
5 Miles	E, F	No Protection: 4.83E-06 Sheltered: 4.31E-06	1.17E-06 5.63E-07	

2. Explanation of displayed data:
 - a. Assessment Method – Method used to calculate downwind doses.
 - b. Evacuation Conditions – Entered evacuation conditions and meteorological data, along with Release Duration.
 - c. Form displays the meteorological data used to determine PAR.
 - d. Form displays an EPZ map, Subzones in which the population may receive doses exceeding a PAG will be shaded.
 - e. Affected Subzones – These are the downwind Subzones which are affected by the release.

3.6 Protective Action Recommendations (continued)

NOTE: The State/County Notification Form uses the units of mrem for reporting.

- f. TEDE and CDE Thy (Thyroid)– Shows the highest doses (no protection and sheltered) in Rem for each Ring.
3. The **RRs** button will display the total release rates for isotopic groups in Ci/sec. To return to the PAR Form, press the **OK** button.
4. User can now Print the "Dose Based PARs and Notification Form Input" using the **Print** button, or
5. Go **Back** and modify inputs. This will return the user to either Quick Assessment Form or one of the Assessment Method forms available in Full Assessment.

Group Release Rates			
	True (NRC)	Equivalents (State)	
Noble Gases	4.77E+00	9.12E+01	(Xe-133)
Halogens	2.47E-01	4.30E-02	(I-131)
Particulates	1.64E-02	1.98E-02	(Cs-137)
(Units of Ci/sec)			OK

3.7 Full Assessment

1. The Full Assessment operations and calculations are identical to the Quick Assessment method for a monitored release, but it allows the user to make more choices in performing dose projection calculations.
2. Choosing the Full Assessment option directs the program to a baseline data entry window. The window is divided into four input areas.

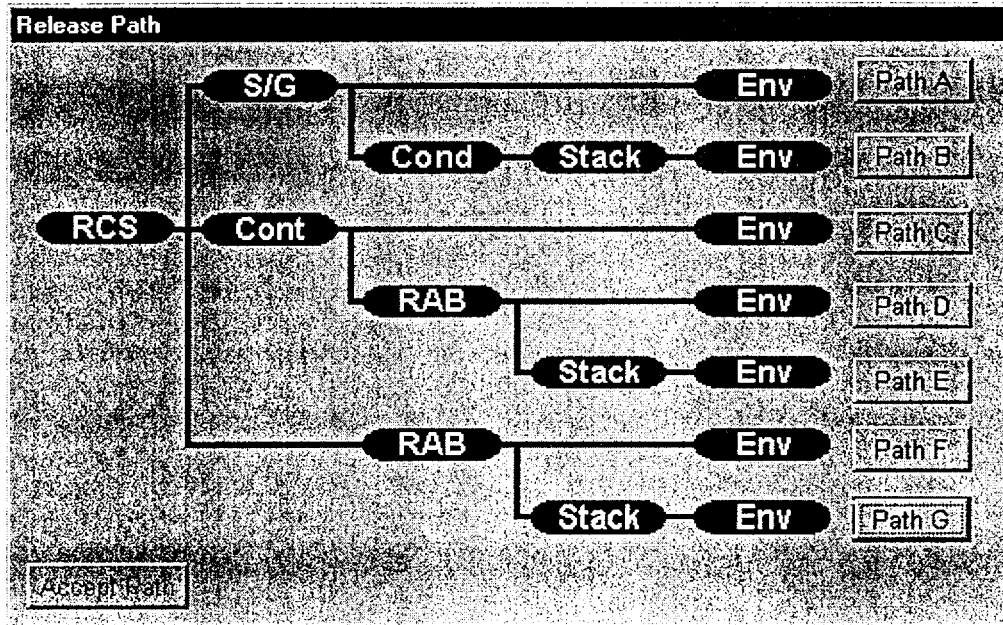
Full Assessment	
Source Term <input checked="" type="checkbox"/> Reactor Core Accident Type of Damage: <input checked="" type="radio"/> Gap <input type="radio"/> Melt Amount of Damage (%): <input type="text" value="10"/> <input type="checkbox"/> Spent Fuel Accident <input checked="" type="radio"/> New <input type="radio"/> Old <input type="checkbox"/> Waste Gas Decay Tank Accident Hours After S/D (h:mm): <input type="text" value="0:16"/>	Meteorological Data Wind Speed (MPH): <input type="text" value="6.5"/> Wind Direction (From): <input type="text" value="258"/> Stability Class (A-G): <input type="text" value="D"/> Conditions: <input type="text" value="Max ETE"/> <input type="text" value="3:35"/> Release Duration (h:mm): <input type="text" value="1:15"/>
Dominant Release Path <input type="text" value="<RC><S/G><ENV>"/> <input type="button" value="Select Path"/> PRF: <input type="text" value="0.02"/>	Assessment Method <input type="text" value="Monitored Release"/> <input type="button" value="Continue"/> <input type="button" value="Back"/>

3.7 Full Assessment (continued)

3. Choose **Source Term** – This allows user to choose the appropriate source term depending on plant conditions and the type of accident that has occurred.
 - a. Select Reactor Core Accident if the source of the release is from the reactor core. Select Gap or Melt and the % Damage based on core damage estimates or known conditions in the plant.
 - b. Select Spent Fuel if the release is caused by damage to the spent fuel. User chooses between New Fuel or Old Fuel based on the type of fuel that has been damaged. Program uses a gap release scenario and defaults to a reactor Time After Shutdown based on this choice.
 - c. Select Waste Gas Decay Tank Accident if the release is caused by damage/failure of a waste gas decay tank. Program sets source to one failed Waste Gas Decay Tank inventory.
 - d. Enter Time after S/D in hours and minutes.

NOTE: Steps 4 and 5 apply only to Reactor Core Accident Types.

4. Select the **Dominant Release Path** – choose the most appropriate release path:



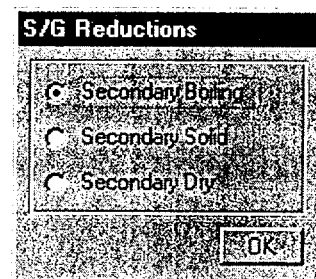
3.7 Full Assessment (continued)

5. Depending on the path chosen the user will be presented with more choices to pick the appropriate Process Reductions for the release.

Process Reduction Factors

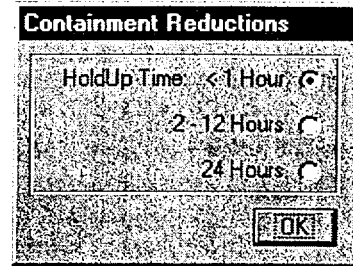
Removal Mechanism	PRF
Maximum (all systems)	0.001
S/G Tube Rupture Secondary Boiling	0.02
S/G Tube Rupture Secondary (Solid) No Boiling	0.50
S/G Tube Rupture Secondary Dry S/G	1.00
Bypass (failure into low-pressure system)	0.40
0.5 Hr Hold-Up Containment Spray	0.03
2-12 Hr Hold-Up Containment Spray	0.02
24 Hr Hold-Up Containment Spray	0.002
0.5 Hr Hold-Up No Containment Spray	0.4
2-12 Hr Hold-Up No Containment Spray	0.04
24 Hr Hold-Up No Containment Spray	0.01
Condenser Releases (no non-noble releases)	0.00
Building Holdup 0.5 Hr	0.40
Building Holdup 2-12 Hr	0.04
Building Holdup 24 Hr	0.01
Small Releases through Bldg Filters	0.01

- a. If a release through the Steam Generators is chosen. Determine the status of the secondary side of the steam generator and select the appropriate condition.
- b. If a release through containment is chosen:
 - First determine if containment sprays are on or off.



3.7 Full Assessment (continued)

- Then determine containment holdup time.



Containment Reductions

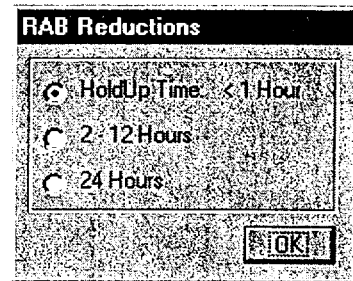
HoldUp Time < 1 Hour ☒

2-12 Hours ☐

24 Hours ☐

OK

- c. If a release through the RAB is chosen, determine the RAB holdup time.



RAB Reductions

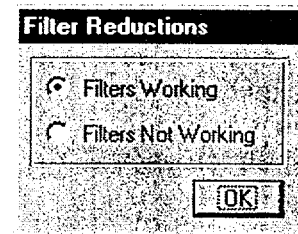
HoldUp Time < 1 Hour ☒

2-12 Hours ☐

24 Hours ☐

OK

- d. If a release through a filtered Vent is chosen select if the filters are working or not. If the release has been ongoing for a long time or contains a large amount of liquids, filters may not be working.



Filter Reductions

Filters Working ☒

Filters Not Working ☐

OK

NOTE: If Met Tower data is unavailable, another source of meteorological data, such as the National Weather Service or a local TV or Radio broadcast station, may be used and the stability class can be estimated.

6. Input **Meteorological Data** – Enter the appropriate data from plant instruments as follows:
 - a. Wind Speed (MPH) – Obtain the Lower Wind Speed from the ERFIS computer (Point MMT1008) or the Control Room.
 - b. Wind Direction (From) – Obtain the Lower Wind Direction from the ERFIS computer (Point MMT 1014) or the Control Room.

3.7 Full Assessment (continued)

- c. Stability Class (A-G) – Obtain the stability class from the ERFIS computer (Point MMT 1017) or the Control Room.

Stability Classes:

- A 1 Extremely unstable conditions
- B 2 Moderately unstable conditions
- C 3 Slightly unstable conditions
- D 4 Neutral conditions
- E 5 Slightly stable conditions
- F 6 Moderately stable conditions
- G 7 Extremely stable conditions

- d. If the stability class is not available use the following table to choose appropriated value:

Surface Wind Speed (mph)	Daytime Solar Radiation (For moderate cloud cover move one column to the right)			Nighttime Conditions		Day or Night
	Summer/ Clear Sky	Spring & Fall Clear Sky	Winter	Thin overcast (>1/2 cloud cover)	<3/8 cloud cover	
	A	A-B	B			D
0.0 to 9.0	A-B	B	C	E	F	D
9.0 to 13.5	B	B-C	C	D	E	D
> 13.5	C	C-D	D	D	D	D

NOTE: The conditions Good or Adverse in the following step are in relation to the weather. Adverse is heavy rain or any other condition which would hinder the flow of traffic.

7. **Set Evacuation Conditions** – Click on the “Conditions” button to select the appropriate conditions for the program to calculate the Maximum Evacuation Time Estimate (ETE). Once the user sets the evacuation conditions the program will place the Max ETE value in the “Release Duration” and “Max ETE” text boxes.

Weather Conditions

Conditions:

☒ Good

☐ Adverse

Time of Day:

☒ Daytime [6AM - 6PM]

☐ Evening [6PM - 6AM]

Time of Week:

☒ Weekday

☐ Weekend/Holiday

OK

3.7 Full Assessment (continued)

8. If the **Release Duration** is known, change the displayed times to the known release duration. If a good estimate of the release duration can not be determined use the default value entered by the program.

NOTE: User may switch back and forth between assessment methods as more information becomes available or conditions change. With the exception of the Hours After Shutdown, which updates each time user returns to the main form, the data on the Full Assessment form will not change unless user changes it.

9. Choose the **Assessment Method** – Choose the appropriate assessment method based on available inputs. Assessment methods:
 - a. Monitored Release – Choose this method for a release through a plant vent or through the Main Steam Relief Valves/PORV. Go to Section 3.8.
 - b. Containment Leakage/Failure – Choose this method for containment failure scenarios. Go to Section 3.9.
 - c. Field Team Analysis – Choose this method if field team survey or sample data is available. Go to Section 3.10.
 - d. Release Point Analysis – Choose this method if a sample from a release point has been obtained and a release flow rate can be estimated. Go to Section 3.11.

3.8 Monitored Release

Monitored Release						
Monitor <input type="radio"/> Plant Vent <input type="radio"/> Turbine Building Stack <input type="radio"/> WP Building Stack 5 <input type="radio"/> WP Building Stack 5a <input checked="" type="radio"/> Main Steam Line		Relief Inputs S/G Press: 600 SRVs Open: 0 PORV Open: <input checked="" type="checkbox"/>		PAGs Exceeded (miles) TEDE To: 1.0 CDE (thyroid) To: 2.5 Rel Dur (hr:min): 2:25		
Reading (mR/hr) 2.00E+02		<input type="button" value="PARs"/> <input type="button" value="Print"/> <input type="button" value="Back"/>				
Distance (miles)	External (mRem/hr)	External (Rem)	Inhalation (Rem)	Deposition (Rem)	TEDE (Rem)	CDE (thyroid) (Rem)
S.B.	2.28E+02	5.06E-01	3.31E+00	1.65E+00	5.46E+00	7.66E+01
0.5	2.08E+02	4.61E-01	3.01E+00	1.51E+00	4.98E+00	6.98E+01
1.0	6.47E+01	1.43E-01	9.38E-01	4.69E-01	1.55E+00	2.17E+01
1.5	3.35E+01	7.43E-02	4.86E-01	2.43E-01	8.03E-01	1.13E+01
2.0	2.14E+01	4.75E-02	3.11E-01	1.55E-01	5.14E-01	7.20E+00
2.5	1.54E+01	3.41E-02	2.23E-01	1.12E-01	3.68E-01	5.16E+00
3.0	1.18E+01	2.62E-02	1.71E-01	8.58E-02	2.84E-01	3.97E+00
3.5	9.53E+00	2.11E-02	1.38E-01	6.91E-02	2.28E-01	3.20E+00
4.0	7.93E+00	1.76E-02	1.15E-01	5.75E-02	1.90E-01	2.66E+00

1. Choose the appropriate monitor:
 - a. Plant Vent – this is stack #1, the monitor reading from computer point RAV3509H is used for this release point. It reads out in $\mu\text{Ci/sec}$ for this monitor.
 - b. Turbine Building Vent – this is stack #3, the monitor reading from computer point RTV3536D is used for this release point. It reads out in $\mu\text{Ci/sec}$ for this monitor.
 - c. WP Building Vent 5 – computer point RWV3546H is used for this release point. It reads out in $\mu\text{Ci/sec}$ for this monitor.
 - d. WPB Building Vent 5A – computer point RWV3547H is used for this release point. It reads out in $\mu\text{Ci/sec}$ for this monitor.
 - e. Main Steam Line – The Main Steam Line radiation monitors are used for this release point. The computer points for these monitors are RMS3591A, RMS3592A, and RMS3593A. Since these monitors read out in mR/hr a flow has to be determined to calculate the $\mu\text{Ci/sec}$ release rate. This is accomplished by entering the steam pressure and the number of relief valves, or PORV, that are/is open.
2. Input **Reading** Information – User enters the appropriate monitor reading in $\mu\text{Ci/sec}$ or mR/hr.

3.8 Monitored Release (continued)

3. After User enters data the program calculates offsite doses. The user can now perform one of the following items:
 - a. Press Print button– Prints offsite dose projections based on monitor release.
 - b. Press Back button to Change input data on the Full Assessment Form.
 - c. Press PARs button to view PAR form or to obtain a printout of information in support of preparation of a State/County Emergency Notification Form – Go to section 3.6.
 - d. Select a different monitor and/or change readings to recalculate doses and update PAR.

3.9 Containment Leakage/Failure

Containment Leakage/Failure

☐ Leakage: 0.1 % per Day
☒ Failure to Isolate (100% per Day)
☐ Catastrophic Failure (100% in 1 hour)

Release Duration (hh:mm): 3:25

PARs: Print: Back

PAGs Exceeded (miles):
TEDE to: 4.0
CDE (thyroid) to: 8.0

Distance (miles)	External (mRem/hr)	External (Rem)	Inhalation (Rem)	Deposition (Rem)	TEDE (Rem)	CDE Thyroid (Rem)
S.B.	1.20E+03	2.69E+00	1.79E+01	8.92E+00	2.95E+01	4.14E+02
0.5	1.10E+03	2.45E+00	1.63E+01	8.13E+00	2.69E+01	3.78E+02
1.0	3.41E+02	7.64E-01	5.08E+00	2.53E+00	8.37E+00	1.18E+02
1.5	1.77E+02	3.96E-01	2.63E+00	1.31E+00	4.33E+00	6.09E+01
2.0	1.13E+02	2.53E-01	1.68E+00	8.39E-01	2.77E+00	3.89E+01
2.5	8.11E+01	1.82E-01	1.21E+00	6.02E-01	1.99E+00	2.79E+01
3.0	6.24E+01	1.40E-01	9.28E-01	4.63E-01	1.53E+00	2.15E+01
3.5	5.03E+01	1.13E-01	7.48E-01	3.73E-01	1.23E+00	1.73E+01
4.0	4.18E+01	9.36E-02	6.22E-01	3.10E-01	1.03E+00	1.44E+01

1. Select the appropriate containment release mode:
 - a. Leakage – Program defaults to 0.1% per day which is the Design Leakage rate per the FSAR. If a different percentage of leak rate has been calculated by TSC engineers enter that value in the % per day text box.
 - b. Failure to Isolate – Assumes 100% of the isotopes available for release are released in a 24 hour time period.
 - c. Catastrophic Failure – Assumes 100% of the isotopes available for release are released in a 1 hour time period.

3.9 Containment Leakage/Failure (continued)

2. After User enters data the program calculates offsite doses. The user can now have the program perform the following items:
 - a. Press Print button to prints offsite dose projections based on containment failure.
 - b. Press Back button to change input data on the Full Assessment Form.
 - c. Change containment failure mode – either by selecting different type of containment failure or % of daily leakage.
 - d. Press PARs button to view PAR form or to obtain a printout of information in support of preparation of a State/County Emergency Notification Form – Go to section 3.6.

3.10 Field Team Analysis

NOTE: The program calculates the plume Travel Time and Release Time to allow Dose Assessment personnel to compare previous dose assessment reports with data measured in the field.

1. Analysis Method –**Survey** – Select this method if Field Team Dose Rate Survey Data is available.

Field Team Analysis																																			
Analysis Basis <input checked="" type="radio"/> Survey <input type="radio"/> Sample		PAGs Exceeded (miles)																																	
Downwind (miles):	4.00	Travel Time: 4:00 Release Time: 15:55 Field X/Q: 6.87E-05 Release Dur: 3:35																																	
Crosswind (miles):	0.10																																		
Level (mR/hr):	12.0																																		
Survey Time:	19:55																																		
Print <input type="button" value="PA/RS"/> <input type="button" value="Back"/>																																			
NOTE: Field team dose and dose rate values based on rad level surveys only include the external exposure component. Values are to be used for comparison purposes only. They are NOT to be used as the basis for making Protective Action Recommendations or for TEDE/CDE values on Emergency Notification Forms.																																			
		<table border="1"><thead><tr><th>Isotope</th><th>Concentration (uCi/cc)</th></tr></thead><tbody><tr><td>Kr-85</td><td></td></tr><tr><td>Kr-85m</td><td></td></tr><tr><td>Kr-87</td><td></td></tr><tr><td>Kr-88</td><td></td></tr><tr><td>Xe-131m</td><td></td></tr><tr><td>Xe-133</td><td></td></tr><tr><td>Xe-133m</td><td></td></tr><tr><td>Xe-135</td><td></td></tr><tr><td>Xe-135m</td><td></td></tr><tr><td>Xe-138</td><td></td></tr></tbody></table>		Isotope	Concentration (uCi/cc)	Kr-85		Kr-85m		Kr-87		Kr-88		Xe-131m		Xe-133		Xe-133m		Xe-135		Xe-135m		Xe-138											
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Xe-135m																																			
Xe-138																																			
		<table border="1"><thead><tr><th>Distance (miles)</th><th>Centerline X/Qs</th><th colspan="2">Dose (Rem)</th></tr></thead><tbody><tr><td>S.B.</td><td>2.37E-03</td><td>4.14E+02</td><td>1.48E+00</td></tr><tr><td>0.5</td><td>2.17E-03</td><td>3.79E+02</td><td>1.36E+00</td></tr><tr><td>1.0</td><td>7.37E-04</td><td>1.29E+02</td><td>4.61E-01</td></tr><tr><td>1.5</td><td>4.02E-04</td><td>7.03E+01</td><td>2.52E-01</td></tr><tr><td>2.0</td><td>2.65E-04</td><td>4.63E+01</td><td>1.66E-01</td></tr><tr><td>2.5</td><td>1.93E-04</td><td>3.37E+01</td><td>1.21E-01</td></tr><tr><td>3.0</td><td>1.49E-04</td><td>2.61E+01</td><td>9.34E-02</td></tr></tbody></table>		Distance (miles)	Centerline X/Qs	Dose (Rem)		S.B.	2.37E-03	4.14E+02	1.48E+00	0.5	2.17E-03	3.79E+02	1.36E+00	1.0	7.37E-04	1.29E+02	4.61E-01	1.5	4.02E-04	7.03E+01	2.52E-01	2.0	2.65E-04	4.63E+01	1.66E-01	2.5	1.93E-04	3.37E+01	1.21E-01	3.0	1.49E-04	2.61E+01	9.34E-02
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3.0	1.49E-04	2.61E+01	9.34E-02																																

3.10 Field Team Analysis (continued)

2. Analysis Method **Sample** – Select this method if Field Team Air Sample Data is available.

Field Team Analysis																												
Analysis Basis <input type="radio"/> Survey <input checked="" type="radio"/> Sample		PAGs Exceeded (miles) TEDE To: <input type="text" value="10.0"/> CDE (thyroid) To: <input type="text" value="10.0"/>		<table border="1"> <thead> <tr> <th>Isotope</th> <th>Concentration (uCi/cc)</th> </tr> </thead> <tbody> <tr><td>Kr-85</td><td></td></tr> <tr><td>Kr-85m</td><td></td></tr> <tr><td>Kr-87</td><td>1.00E+00</td></tr> <tr><td>Kr-88</td><td></td></tr> <tr><td>Xe-131m</td><td>1.11E+02</td></tr> <tr><td>Xe-133</td><td></td></tr> <tr><td>Xe-133m</td><td>2.20E+01</td></tr> <tr><td>Xe-135</td><td></td></tr> <tr><td>Xe-135m</td><td></td></tr> <tr><td>Xe-138</td><td></td></tr> </tbody> </table>			Isotope	Concentration (uCi/cc)	Kr-85		Kr-85m		Kr-87	1.00E+00	Kr-88		Xe-131m	1.11E+02	Xe-133		Xe-133m	2.20E+01	Xe-135		Xe-135m		Xe-138	
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Xe-133m	2.20E+01																											
Xe-135																												
Xe-135m																												
Xe-138																												
Downwind (miles): <input type="text" value="9.00"/> Crosswind (miles): <input type="text" value="0.20"/> Level (m/hr): <input type="text"/> Survey Time: <input type="text" value="12:00"/>		Travel Time: <input type="text" value="4:30"/> Release Time: <input type="text" value="7:30"/> Field X/D: <input type="text" value="2.46E-06"/> Release Duration: <input type="text" value="3:25"/>																										
<input type="button" value="PAR"/> <input type="button" value="Print"/> <input type="button" value="Back"/>																												
Distance (miles)	External (mR/hr)	External (Rem)	Inhalation (Rem)	Deposition (Rem)	TEDE (Rem)	CDE Thyroid (Rem)																						
5.87	2.09E+09	2.71E+06	2.29E+05	1.86E+06	4.80E+06	1.86E+06																						
0.5	1.91E+09	2.47E+06	2.08E+05	1.69E+06	4.38E+06	1.69E+06																						
1.0	5.94E+08	7.70E+05	6.48E+04	5.27E+05	1.36E+06	5.27E+05																						
1.5	3.08E+08	3.99E+05	3.36E+04	2.73E+05	7.05E+05	2.73E+05																						
2.0	1.97E+08	2.55E+05	2.15E+04	1.75E+05	4.51E+05	1.75E+05																						
2.5	1.41E+08	1.83E+05	1.54E+04	1.25E+05	3.24E+05	1.25E+05																						
3.0	1.09E+08	1.41E+05	1.19E+04	9.63E+04	2.49E+05	9.63E+04																						

3. Enter Location of Field Team Sample, Reading(s) and time sample was taken. Program will not allow mR/hr readings for sample data or isotopic results for survey data.
 - a. Downwind (miles) – straight line distance from release point to sample location.
 - b. Crosswind (miles) – the distance the team was away from the centerline when the sample was taken. The program will warn user if reported sample location is wider than expected plume width. The maximum width of any plume for the most unstable stability class is 2.96 miles, 10 miles downwind.
 - c. If Analysis Method is Dose Rate Survey – Enter the Field Team Survey reading in the box labeled "Level".
 - d. If Analysis Method is Air Sample Results enter the $\mu\text{Ci/cc}$ values for each known isotope in the table at the upper right section of the form.
 - e. Survey Time – Enter the time the survey or sample was taken.

3.10 Field Team Analysis (continued)

4. After User enters data the program calculates offsite doses. The user can now have the program perform the following items:
 - a. Press Print button to prints offsite dose projections based on Field Team Survey/Sample data.
 - b. Press Back button to Change input data on the Full Assessment Form.
 - c. Press PARs button to view PAR form or to obtain a printout of information in support of preparation of a State/County Emergency Notification Form – Go to section 3.6.

3.11 Release Point Analysis

Release Point Analysis

Isotope	Concentration (uCi/cc)
Kr-85	
Kr-85m	
Kr-87	2.22E+02
Kr-88	
Xe-131m	
Xe-133	
Xe-133m	
Xe-135	

Vent Flow Rate (SCFM)

Release Duration (hr:min)

PAGEs Exceeded (miles)

TEDE To

PARs

Print

Back

Distance (miles)	External (mR/hr)	External (Rem)	Inhalation (Rem)	Deposition (Rem)	TEDE (Rem)	CEET (Rem)
0.5	7.24E+04	1.12E+02	0.00E+00	0.00E+00	1.12E+02	0.00E+00
1.0	6.60E+04	1.02E+02	0.00E+00	0.00E+00	1.02E+02	0.00E+00
1.5	2.05E+04	3.18E+01	0.00E+00	0.00E+00	3.18E+01	0.00E+00
2.0	1.06E+04	1.65E+01	0.00E+00	0.00E+00	1.65E+01	0.00E+00
2.5	6.81E+03	1.05E+01	0.00E+00	0.00E+00	1.05E+01	0.00E+00
3.0	4.88E+03	7.55E+00	0.00E+00	0.00E+00	7.55E+00	0.00E+00
3.5	3.76E+03	5.81E+00	0.00E+00	0.00E+00	5.81E+00	0.00E+00
4.0	3.03E+03	4.68E+00	0.00E+00	0.00E+00	4.68E+00	0.00E+00

1. Enter the isotopic known concentration for each isotope (if unknown leave blank).
2. Enter vent flow rate (or estimate flow rate for other releases) in SCFM.
3. After User enters data the program calculates offsite doses. The user can now have the program perform the following items:
 - a. Press Print button to print offsite dose projections based on release point data.
 - b. Press Back button to Change input data on the Full Assessment Form.
 - c. Press PARs button to view PAR form or to obtain a printout of information in support of preparation of a State/County Emergency Notification Form – Go to section 3.6

4.0 GENERAL

4.1 Overview

1. As a Microsoft Windows based application designed in MS Access, DAPAR uses many standard user interfaces. Instructions are not provided in basic computer operations in the Windows® environment. The user must be familiar with these to efficiently operate the program.
2. It is also assumed the user is somewhat familiar with health physics fundamentals. Emergency Response Organization training provides an overview of dose assessment methodologies.

4.2 DAPAR Program Use

The program is to be used to estimate the offsite consequences of a release or potential release of radioactive materials from the HNP during an emergency. The primary purpose of these dose projections is to arrive at a Protective Action Recommendation given by HNP management to offsite authorities. These PARs will be used by those authorities in their decision making process to take actions to protect the general public.

4.3 Limitations of DAPAR Program Use

The program should not be used to calculate the actual dose received by populations exposed to radioactive materials from HNP. Results from it may be used as part of the post accident investigations but a much more in depth analysis is needed to actually assign doses received to members of the public.

4.4 Pre-Conditions for Use of DAPAR

An Emergency has been declared at the HNP. The program makes many conservative assumptions to ensure proper actions are taken offsite prior to exposing the general public to any release of radioactive materials. Use of the program to project doses based on normal plant readings would indicate offsite doses many magnitudes higher than actual offsite doses.

4.5 Definitions, Acronyms and Abbreviations

The following is a list of the Definitions, Acronyms and Abbreviations which a user of the HNP Dose Assessment and Protective Action Recommendations (DAPAR) computer program should be familiar with:

1. **Centerline (plume)** An imaginary line drawn in the middle of the plume along its downwind travel direction. The plume concentrations and deposition are assumed to be the highest along the centerline.
2. **Cloud Shine** Gamma radiation from radioactive materials in the air (plume)

4.5 Definitions, Acronyms and Abbreviations (continued)

3. **Committed Dose Equivalent (CDE)** The dose equivalent to parts of the body that will be received from an intake of radioactive material by an individual over a 50-year period of time.
4. **Committed Effective Dose Equivalent (CEDE)** The sum of the dose equivalent for 50 years following intake (inhalation or ingestion) of a radionuclide to each organ multiplied by a weighting factor
5. **Core Damage** Damage to the components which comprise the reactor core. Core damage typically refers to the failure of fuel cladding and/or fuel melting as a result of overheating.
6. **Curie (Ci)** A unit of radioactivity equal to $3.7\text{E}+10$ disintegrations per second.
7. **Delta T** As used in dose projections it is the difference in temperature from the 11 meter temperature sensor and the 59.9 meter temperature sensor on the HNP meteorological tower.
8. **Deposition** The contamination found on the surface of the ground.
9. **Dose Commitment** The dose that will be accumulated by a specific organ over a specified period following uptake.
10. **Dose Conversion Factor (DCF)** The dose equivalent per unit intake of a radionuclide ($\text{mrem}/\mu\text{Ci}$) or the effects of exposure to a given concentration of an isotope in a plume. $\text{R/hr per } \mu\text{Ci/cc}$.
11. **Dose Projection** The calculation of individual radiation exposure at a given location at some time in the future. Dose projections are performed in response to an actual or anticipated release of radioactive material to the environment.
12. **Effective Dose Equivalent (EDE)** The sum of the dose equivalent from external exposure to each organ multiplied by a weighting factor. EDE is used to estimate the risk of delayed health effects.
13. **Emergency Planning Zone (EPZ)** An area around a nuclear power plant in which plans are in place for an emergency at the plant. Plans are in place to take immediate protective actions for individuals located within 10 miles of the Harris Nuclear Plant. This area is called the Plume Exposure Emergency Planning Zone. In addition, longer term plans are in place for the Ingestion Pathway Emergency Planning Zone which is within 50 miles of the plant.
14. **Evacuation Exposure Period** The period during which those being evacuated are exposed to the radioactive plume.

4.5 Definitions, Acronyms and Abbreviations (continued)

15. **Millirem (mR or mrem)** One one-thousandth of a rem. The rem is a unit of measure which defines the extent of biological injury that results to the body when it is exposed to radiation.
16. **Offsite** The area out side the site boundary, approximately 2500 feet from the center of Containment
17. **Pilot Operated Relief Valve (PORV)** A valve which serves to reduce pressure in the reactor coolant system or main steam system by allowing steam to escape from the pressurizer or the steam generators. The PORVs can be operated remotely by Plant Operators or automatically by high pressure.
18. **Protective Action Guidelines (PAGs)** Radiation exposure guidelines established by the Environmental Protection Agency which are used to determine the appropriate protective actions to be taken on the part of emergency workers and the general public. These actions include sheltering and evacuation.
19. **Protective Action Recommendations (PARs)** A recommendation made by HNP personnel to the offsite authorities on the appropriate protective actions to be taken on the part of the general public. The PARs are based on plant conditions or dose projections using the PAGs for guidance. These actions include sheltering and evacuation.
20. **Safety Relief Valve** A valve which serves to reduce pressure in a fluid system should the pressure become to high. Both the reactor coolant system (located on the pressurizer) and the main steam system (located on the steam generators) have safety and relief valves to protect them from being damaged by excessive pressure.
21. **Site Boundary** Defined as a circle with a radius of 2500 feet and the containment building as it's center.
22. **Plant Vent** That part of the plant's ventilation system through which the *containment* building and *auxiliary building* air may be processed to the outside atmosphere. The discharge of the Plant Vent is continuously monitored for abnormal amounts of radiation. This vent stack is referred to as the Plant Vent Stack #1.
23. **Subzones** Pre-designated areas offsite in which Protective Actions such as evacuation of sheltering will be performed.
24. **Total Effective Dose Equivalent (TEDE)** A method of converting exposure to radiation to the biological effects that it will cause to the human body. It combines the external and internal ionizing radiation exposure

4.5 Definitions, Acronyms and Abbreviations (continued)

25. **Turbine Bldg Vent Stack** That part of the ventilation system through which the *condenser* and *gland seal* air may be processed to the outside atmosphere. The discharge of this stack is continuously monitored for abnormal amounts of radiation. This vent stack is referred to as Turbine Bldg. Stack #3.
26. **Waste Processing Building Vents** Those parts of the plant's ventilation system through which the *Waste Processing Building (WPB)* air may be processed to the outside atmosphere. The discharge of these Vents is continuously monitored for abnormal amounts of radiation. These vent stacks are referred to as WPB Stack #5 and Stack #5A.

5.0 **REFERENCES**

1. EPM-600
2. Calculation HNP-M/MECH-1078
3. Calculation 3-B-12-023

6.0 **DIAGRAMS / ATTACHMENTS**

N/A

Revision Summary for PEP-340 Rev. 9

This revision to PEP-340 implements revision 3.0 of the DAPAR software.

<u>Section</u>	<u>Changes</u>
3.1	Updated for use of DAPAR Rev. 3.0.
3.5.4	Added references to the Point Ids for the ERFIS Computer
3.6	Described Print function for the "Dose Based PARs and Notification Form Input" using the PARs button, updated screen image, and corrected program button label nomenclature.
3.7	Added note that steps 4 & 5 only apply to Reactor Core Accidents, Added references to the Point Ids for the ERFIS Computer
3.8 - 11	Provided reference to the Dose Based PARs and Notification Form Input form in section 3.6.
4.5	Enhanced definitions of the Vent Stacks at HNP.
5.0	Updated references related to Rev. 3.0 of DAPAR.
General	Updated screen images for Rev. 3.0 of DAPAR and non-intent changes to clean up text to more closely align with program appearance and for typographical or grammatical corrections.