



## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
1 PURPOSE.....	2
2 REFERENCES .....	2
3 DEFINITIONS.....	2
4 RESPONSIBILITIES.....	4
5 GENERAL.....	4
6 PROCEDURE.....	5
7 DOCUMENTATION .....	12
ATTACHMENT 1 - EMERGENCY DIRECTOR - LIMITED OR BUILDING EVACUATION.....	13
ATTACHMENT 2 - EMERGENCY DIRECTOR - OWNER CONTROLLED AREA EVACUATION.....	15
ATTACHMENT 3 - EMERGENCY DIRECTOR - SEARCH AND RESCUE OPERATIONS.....	18
ATTACHMENT 4 - SECURITY COORDINATOR - LIMITED OR BUILDING EVACUATION.....	19
ATTACHMENT 5 - SECURITY COORDINATOR - OWNER CONTROLLED AREA EVACUATION.....	20
ATTACHMENT 6 - OWNER CONTROLLED AREA BUILDINGS .....	22
ATTACHMENT 7 - EVACUATION POINTS AND ASSEMBLY AREAS.....	23
ATTACHMENT 8 - OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT - NO RADIOLOGICAL RELEASE.....	24
ATTACHMENT 9 - OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT - RADIOLOGICAL RELEASE .....	25
ATTACHMENT 10 - ASSEMBLY AREA EAST LAYOUT .....	26
ATTACHMENT 11 - ASSEMBLY AREA WEST LAYOUT .....	27

1     **PURPOSE**

This procedure provides the steps to be followed if a Limited, Building, or Owner Controlled Area Evacuation becomes necessary.

2     **REFERENCES**

- 2.1     Title 10, Code of Federal Regulations, Part 20 (10CFR20), Standards for Protection Against Radiation
- 2.2     River Bend Station Safeguards Contingency Plan
- 2.3     ADM-0060, First Responder Emergency
- 2.4     RBNP-035, Hazardous Material Emergency Response Plan
- 2.5     FPP-0010, Fire Fighting Procedure
- 2.6     PSP-4-413, Safeguards Contingencies
- 2.7     EIP-2-012, Radiation Exposure Controls
- 2.8     EIP-2-016, Operations Support Center
- 2.9     RP-104, Personnel Contamination Event

3     **DEFINITIONS**

- 3.1     Alternate Evacuation Assembly Area - A designated area where evacuees may assemble for radiation monitoring during an Owner Controlled Area evacuation. This assembly area is located at the intersection of West Feliciana Parish (WFP) 7 (State Highway 965) and the River Access Road (see Attachment 7). The evacuation route from the Protected Area is through the Alternate Evacuation Point (South Train Gate). Individuals in the Protected Area will proceed on foot down River Access Road, past Grant Substation to the junction of West Feliciana Parish (WFP) 7 (State Highway 965) to the Alternate Assembly Area. Transportation will be provided at that point. Individuals outside of the Protected Area should follow directions from Security personnel and posted signs.

- 3.2 Alternate Evacuation Point - The alternate egress point from the Protected Area that may be used, if necessary, during an Owner Controlled Area Evacuation. It is sometimes referred to as the "South Train Gate" (see Attachment 7). This is the Evacuation Point used for proceeding to the Alternate Evacuation Assembly Area.
- 3.3 Building Evacuation - The withdrawal of all personnel from one building.
- 3.4 Evacuation Assembly Area East - The Training Center, located at the intersection of the River Bend Power Station Road and the west Training Center parking lot entrance (see Attachment 7). The evacuation route is through the Primary Access Point (PAP) to the River Bend Power Station Road via private vehicle and then to the Training Center.
- 3.5 Evacuation Assembly Area West - The River Bend Activity Center, located near the intersection of the River Bend Power Station Road and West Feliciana Parish (WFP) 7 (State Highway 965) (see Attachment 7). The evacuation route is through the Primary Access Point (PAP) to the River Bend Power Station Road via private vehicle and then to the River Bend Activity Center.
- 3.6 Limited Evacuation-The withdrawal of individuals from a room or area due to a localized hazard.
- 3.7 Limited/Building Evacuation Accountability - Actions taken that attempt to determine the evacuation status of individuals within the Limited/Building area.
- 3.8 Non-essential Personnel - Non-essential personnel includes employees not having emergency assignments, visitors, contractor personnel (excluding Security), and members of the public within the Owner Controlled Area.
- 3.9 Owner Controlled Area Evacuation - The withdrawal of all non-essential personnel from the Owner Controlled Area, which includes the Protected Area, whenever extensive unexpected and uncontrolled hazards exist.
- 3.10 Primary Evacuation Point - For the protected area, the PAP is used (see Attachment 7). This is the Evacuation Point used for proceeding to the Evacuation Assembly Areas East and West.
- 3.11 Protected Area Accountability - Actions taken to determine the evacuation status of individuals within the Protected Area.
- 3.12 Search and Rescue Team - Teams used to locate missing/unaccounted individuals and to provide assistance in removing individuals from the

evacuated area. Search and Rescue Teams should be composed of at least two persons selected from Radiation Protection Technicians, Chemistry Technicians, Nuclear Control Operators/Nuclear Equipment Operators, or First Responders. If one of the team members is not an RP Technician, at least one of the team members must be trained in the use of radiation survey instruments. At least one team member must be trained in search and rescue techniques.

#### 4 RESPONSIBILITIES

- 4.1 Emergency Director - implements this procedure if a Site Area Emergency or General Emergency has been declared, or if conditions warrant implementation of a Limited, Building, or Owner Controlled Area Evacuation.
- 4.2 Radiation Protection Coordinator - initiates monitoring and decontamination, as necessary.
- 4.3 Security Coordinator - coordinates the accountability of personnel in an evacuation.

#### 5 GENERAL

- 5.1 ALARA principles shall be adhered to prior to initiating an evacuation. Considerations should be given to 1) radiological conditions at the Assembly Points, onsite and along evacuation routes; and 2) whether these conditions can be mitigated prior to evacuees receiving significant exposure.
- 5.2 Plant or site evacuations should be initiated either before or after the passage of a release, and evacuation routes should be chosen such that evacuees travel away from the path of the plume.
- 5.3 The safety of evacuees takes precedence over the monitoring of evacuees and vehicles for contamination control purposes. The monitoring of evacuees and vehicles should be terminated (or not implemented) if monitoring may increase the hazard to individuals.

6      **PROCEDURE**

**NOTE**

*The actions of this procedure may be completed in any sequence, however, the sequence presented is recommended.*

6.1      Limited Evacuation/Building Evacuation

6.1.1    The Emergency Director should use Attachment 1 as a guideline.

6.1.2    The Radiation Protection Technicians at the assembly location should:

1.      Determine if any evacuees are injured:
  - a.      Report status to the Emergency Director immediately (or the Operations Support Center (OSC) Director if the OSC is operational).
  - b.      Administer first aid procedures to the extent of capability until relieved by the designated First Responders on shift.
  - c.      Assist in implementing ADM-0060 until injured persons no longer need assistance or are removed from the assembly location.
2.      Assist Security in determining if all persons in the evacuated area have been accounted for.
3.      As necessary, perform radiological monitoring of evacuees and implement RP-104.
4.      If significant radioactive contamination is found on any individual in the assembly location, notify the Emergency Director (or OSC Director if the OSC is operational) of the individual's evacuation route and that this route may be contaminated.
5.      Upon completion of personnel surveys, monitor the assembly location for radioactive contamination and decontaminate or post as applicable.
6.      Notify the Emergency Director (or the OSC Director if the OSC is operational) when the above tasks are completed.

**NOTE:**

*If an evacuation is ordered by the Emergency Director, the on duty Security Shift Supervisor will act as the TSC Security Coordinator (for evacuation actions only), until relieved by a qualified individual. While in this capacity, the Security Shift Supervisor will not physically report to the TSC.*

6.1.3 The Security Coordinator should use Attachment 4 as a guideline.

6.2 Owner Controlled Area Evacuation

6.2.1 The Emergency Director should use Attachment 2 as a guideline.

6.2.2 The Radiation Protection Coordinator should:

1. **IF** a radiological release has already occurred, is occurring, or is imminent, **THEN** ensure the dispatch of Radiation Protection Technicians (at least two) to the Assembly Area.
2. Determine the existent or potential hazards in the area and brief the Security Coordinator on the hazards and protective measures necessary to protect Security Officers and individuals within the Owner Controlled Area.
3. Advise the Security Coordinator on affected wind sectors (centerline and two side sectors) and the need to establish special evacuation routes due to a radiological release or other plant conditions.

6.2.3 The Security Coordinator should use Attachment 5 as a guideline.

6.2.4 The Security Shift Supervisor, as directed, should:

**NOTE:**

*Evacuation will be conducted by security personnel not filling security positions required to maintain the station's protective strategy.*

1. Receive an evacuation briefing from the Security Coordinator, if available.
2. Assign available Security Officer(s) to conduct the evacuation of the Owner Controlled Area.

3. Ensure officer(s) assigned evacuation duties obtain one of the OCA evacuation bags in the Access Control Station (ACS).
4. Members of the public may occupy some outlying buildings. Security is responsible to notify those individuals of any radiological hazards, protective measures, and evacuation routes.
5. If directed, dispatch other available officer(s) to the selected Assembly Area to assist in traffic control and an orderly evacuation process.
6. Establish controls to prevent persons from entering evacuated areas.
7. Direct the officer(s) at the security checkpoint to stop all incoming traffic, except those necessary to respond to the plant emergency. Use the Security Authorization List (Emergency Director/Recovery Manager) for authorization to enter the site.
8. Process emergency vehicles through the security checkpoint and Sally Port in accordance with Security procedures.
9. Ensure the additional requirements during emergency evacuation (Event E-1) in the RBS Safeguard Contingency Plan and PSP-4-413 (Safeguards Information) are met.

6.2.5 The Security Officer should:

1. Perform duties as directed.
2. Prior to evacuating the Owner Controlled Area buildings and outside areas, receive a briefing on the evacuation announcement including applicable radiation hazards, evacuation routes, assembly area (if required), and radiation monitoring (if required) for evacuees.

**NOTE:**

*Officers will unlock any gates or buildings or open any vehicle barriers to facilitate an evacuation, as needed.*

3. IF the evacuation information includes directions to the West (Activity Center) or Alternate Assembly Area, THEN unlock the appropriate gate(s) and open vehicle barriers to allow egress.

4. Obtain one of the Owner Controlled Area (OCA) evacuation bags from the Access Control Station (ACS). The bag(s) should contain the following equipment/tools:
  - \* Keys to all outlying buildings
  - \* Portable public address device (w/batteries, if applicable)
  - \* Evacuation Announcement script (Attachment 8 or 9)
  - \* List of buildings in the OCA to evacuate (Attachment 6)
  - \* RBS 1-mile radius site map
  - \* Bolt cutters
  
5. Evacuation activities:

**NOTE:**

*It is not necessary to enter outlying buildings where all entrances are padlocked.*

- a. Enter each building and announce the evacuation using the prescribed message.
- b. Avoid lingering in buildings to answer questions.
- c. A search of every office is not necessary.
- d. An evacuation announcement is not necessary in buildings/areas where Security has confirmed that no personnel are present.
- e. Single story buildings should be entered and the announcement made from a location adjacent to the doorway. It is not necessary to walk through an entire building to make evacuation announcements. Multiple entryways, such as those at Field Administration, Main Administration, or other similar locations, should be entered and an announcement made from an appropriate location.
- f. Multi-story office buildings should be entered on each floor and the announcement made from an appropriate location (e.g., each floor of the Generation Support Building may be notified by exiting the elevator/stairwell on each floor and making the announcement from a location near the elevator/stairwell).

- g. Evacuation Officer(s) may designate personnel inside the buildings to spread the evacuation announcement, provided the employee(s) are given appropriate information, such as applicable radiation hazards, evacuation routes, assembly areas, and required monitoring.
- h. The evacuation Officer(s) should contact the Security Shift Supervisor (or designee) when a building or area has been completed to assist security supervision in tracking the progress of the OCA evacuation.
- i. When passing wooded areas or parked vehicles along plant roads, make frequent stops and make announcements from the vehicle window.

**6.2.6 The Radiation Protection Technicians at the Assembly Area should:**

- 1. Obtain radios and appropriate equipment for monitoring and decontamination at Alternate Assembly Area.
- 2. Establish communications with the Radiation Protection Coordinator.
- 3. When surveying vehicles, have driver and passengers remain in the vehicle until the survey of the outside of the vehicle is complete.
- 4. Survey areas outside of the vehicle such as:
  - front bumper
  - grill
  - tires
  - fender wells
  - door handles
  - rear bumper
  - outside of air cleaner

5. IF vehicle is contaminated, THEN have evacuee move vehicle to designated parking area and assemble using the following guidelines:
  - a. IF the Assembly Area East is used, THEN direct evacuees to park their vehicles in the Training Center parking lot in a designated location for isolation and have the individuals assemble outside the West end entrance to the Emergency Operations Facility (EOF) (see Attachment 10).
  - b. IF the Assembly Area West is used, THEN direct evacuees to park their vehicles in the River Bend Activity Center parking lot in a designated location for isolation of the vehicles and have the individuals assemble on the East side of the River Bend Activity Center (see Attachment 11).
  - c. IF the Alternate Assembly Area is used, THEN direct evacuees to assemble in a designated isolated location and request guidance from the Radiation Protection Coordinator in the TSC or the Emergency Director.
6. Record the location and readings of any contamination found.
7. Survey evacuees from the clean vehicle parking area and decontaminate, as necessary, in accordance with RP-104. If no contamination is found, direct evacuees to leave the area.
8. Survey evacuees from the contaminated vehicle parking area and decontaminate, as necessary, in accordance with RP-104. If no contamination is found, direct evacuees to a "clean waiting area" or offsite.
9. Record the location and readings of any contamination found.
10. When time permits and after completion of personnel decontamination, begin decontamination of vehicles.
11. If necessary, request back-up Radiation Protection assistance from the Radiation Protection Coordinator in the TSC.

12. Notify the Radiation Protection Coordinator when the following tasks are completed:
  - a. All personnel and vehicles identified as contaminated have been decontaminated or have been detained for further evaluation and possible additional decontamination.
  - b. All areas and equipment requiring decontamination have been decontaminated or identified for further evaluation and possible additional decontamination.
13. Return documentation to the Radiation Protection Coordinator.

### 6.3 Search and Rescue Operations

6.3.1 The Emergency Director should use Attachment 3 as a guideline.

6.3.2 The Radiation Protection Coordinator should:

1. Obtain information on likely areas to be searched from the Emergency Director or Security Coordinator.
2. Contact and consult with the Senior Radiation Protection Technician regarding conditions and precautions necessary to be used in the area(s) of the search, and appropriate protective equipment and dosimetry.

6.3.3 The Operations Support Center Director should:

**NOTE:**

*At least one member of the Search and Rescue Team must be survey meter trained.*

1. Record the team members' names, time the team is dispatched and dosimetry information, including accumulated effective dose equivalent for each team member in the OSC log.
2. Brief team members on areas to be searched and document all team actions during search and rescue operations.
3. WHEN the Search and Rescue Team reports finding the missing individual(s), THEN contact the Emergency Director to report the status of the individual(s).

6.3.4 The Senior Radiation Protection Technician should:

1. Using the team briefing checklist in EIP-2-016, brief the team members on the radiological hazards involved, emergency exposure limits and specify dosimetry and protective clothing/equipment to be utilized.
2. Specify routes for the team to follow in order to minimize radiation exposures of team members, as possible.
3. Caution the team members to keep the OSC informed of accumulated exposures.

6.3.5 The Search and Rescue Team members should:

1. Receive a briefing from the Senior Radiation Protection Technician and the OSC Director/Manager.
2. If the missing individual is found and requires first aid treatment:
  - a. Contact the Control Room and request announcement over the Page Party/Gaitronics for dispatch of First Responders.
  - b. Make a quick assessment of the individual's condition and the need to move the person from the present location.
  - c. If there is not an immediate hazard from the present surroundings, administer first aid on-the-spot, if qualified.
3. Notify the OSC Director of the status of the individual(s).
4. Upon completion of the assignment, report accumulated exposures to the Senior Radiation Protection Technician.

7 **DOCUMENTATION**

Attachments 1-5 of this procedure will be sent to Permanent Plant Files (PPF) per EPP-2-100 by the Manager - Emergency Preparedness.

EMERGENCY DIRECTOR

LIMITED OR BUILDING EVACUATION

**DISCUSSION:**

*In general, limited or building evacuations will be in accordance with the following guidelines:*

1. *A limited evacuation may be implemented when any of the following conditions exist:*
  - a. *Unexpected area radiation monitor high level alarms are received.*
  - b. *Unexpected high airborne activity as identified by the activation of a continuous air monitor or RP air sample analysis.*
  - c. *Unexpected increase of radioactive surface contamination in an area previously designated clean or in excess of expected levels as identified on a Radiation Work Permit.*
  - d. *Upon discovery of a large radioactive (or suspected radioactive) liquid spill.*
  - e. *Other emergency conditions occur, such as fire or hazardous gas encounters, that may endanger human health or safety.*
  
2. *A building evacuation may be declared when either of the following occur:*
  - a. *Criteria for a limited evacuation are exceeded in two or more large operating areas within one building;*

OR

- b. *An unexpected or uncontrolled exposure rate in excess of the expected dose rate as indicated by an area radiation monitor alarm within a single building.*

EMERGENCY DIRECTOR

LIMITED OR BUILDING EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initials

ACTIONS:

1. Determine an assembly location (normally the second floor hallway of the Services Building outside of the CAA). If the second floor hallway of the Services Building is included in the hazard area, designate an alternate location for evacuated personnel. \_\_\_\_\_
2. Direct RP to dispatch a Radiation Protection Technician to assembly location for personnel monitoring, as necessary. \_\_\_\_\_
3. Direct Security to prepare for a Limited/Building Evacuation and complete the Limited/Building Evacuation actions of Attachment 4. \_\_\_\_\_
4. Determine any areas to avoid during evacuation or any special protective measures to be taken by evacuees. Include these in plant announcement. \_\_\_\_\_
5. Direct the Control Room to merge the Gaitronics and make the following announcement. \_\_\_\_\_

**PULSE tone. "Attention in the plant. Evacuate the (specify area or building) and assemble at the (second floor hallway of the Services Building or alternate location)" (repeat message).**

Plant areas to avoid/protective measures (or none): \_\_\_\_\_

6. Implement ADM-0060, First Responder Emergencies, as necessary. \_\_\_\_\_
7. Implement RBNP-035, Hazardous Material Emergency Response Plan, as necessary. \_\_\_\_\_
8. Implement FPP-0010, Fire Fighting Procedure, as necessary. \_\_\_\_\_
9. Upon report of missing individual(s), implement Search and Rescue in accordance with Attachment 3. \_\_\_\_\_
10. When appropriate, direct Control Room to inform personnel that the hazard no longer exists. \_\_\_\_\_
11. Forward the original of this checklist to the Manager - Emergency Preparedness. \_\_\_\_\_

**EMERGENCY DIRECTOR**

**OWNER CONTROLLED AREA EVACUATION**

**DISCUSSION:**

The decision to evacuate members of the public and non-essential station personnel or shelter them in place should be based on the course of action which presents minimum risk to individuals. Examples of extenuating conditions that may result in deciding against or delaying an evacuation are:

1. An ongoing security threat (consult with the Security Coordinator to aid in determining the safest course of action.)
2. Inclement weather (e.g. tornado, high winds, hazardous road conditions that may preclude a safe evacuation).
3. Radiological or toxic gas hazard exists. (Determine if evacuation actions can be accomplished prior to arrival of the release. Owner Controlled Area evacuation is estimated to take 30-60 minutes.)

**ACTIONS:**

1. IF a radiological release has NOT occurred AND is NOT judged imminent, THEN Go To Step 10.
2. IF a radiological release has occurred, is in progress, or is judged to be imminent, THEN Go To Step 3.
3. Select an Evacuation Point, Assembly Area, and Staging Area using the following guidelines:

Wind Direction From	Evacuation Point	Assembly Area	Staging Area
> 125° - ≤ 260°	South Train Gate	Alternate Assembly Area	Field Admin Training Area
> 260° - ≤ 35°	PAP	Training Center <u>OR</u> Activity Center (Back-up)	MA-2 Training Area
> 35° - ≤ 125°	PAP	Training Center	GSB Cafeteria

EMERGENCY DIRECTOR  
OWNER CONTROLLED AREA EVACUATION

- |  | <u>Action Completed</u> |
|--|-------------------------|
|  | <u>Initial</u>          |
| 4. Direct RP to dispatch Radiation Protection Technicians to the selected Assembly Area to monitor and decontaminate evacuees as necessary.  | _____                   |
| 5. Direct Security to prepare for an Owner Controlled Area evacuation using the selected Assembly Area and to complete the Owner Controlled Area Evacuation actions in Attachment 5. | _____                   |

**CAUTION:**

*IF a condition exists which could jeopardize personnel safety during an evacuation, THEN consider making a plant announcement for personnel to take shelter until the hazard no longer exists.*

- |   |       |
|---|-------|
| 6. Determine any areas to avoid during the evacuation or any special protective measures to be taken by evacuees. Include in plant announcements. | _____ |
| 7. Direct the Control Room to merge the Gaitronics and make an announcement similar to the following:   | _____ |

**PULSE tone. "Attention in the plant. All personnel not presently assigned to an emergency facility are directed to evacuate. Use the (specify the South Train Gate or Primary Access Point). **Engineering, Maintenance, and Operations personnel report to the (specify Field Admin Training Area or Main Admin-2 Training Area or GSB Cafeteria) and standby for further instructions. All other personnel are directed to proceed to the evacuation assembly area (specify Alternate Assembly Area or Training Center or Activity Center).** (Repeat message)**

Plant areas to avoid/protective measures (or none): \_\_\_\_\_  
\_\_\_\_\_

- |  |       |
|--|-------|
| 8. If the Alternate Assembly Area is being used, Protected Area personnel shall walk to the Alternate Assembly Area. Direct the Communicator to request that the Louisiana Office of Emergency Preparedness (LOEP) provide transportation for evacuees as necessary. | _____ |
| 9. At a Site Area Emergency or higher, direct relocation of JIC, if EOF is not operational.  | _____ |

EMERGENCY DIRECTOR

OWNER CONTROLLED AREA EVACUATION

- |  | <u>Action Completed</u> |
|--|-------------------------|
|  | <u>Initial</u>          |
| 10. Continue at Step 12.   | _____                   |
| 11. Direct Security to prepare for an Owner Controlled Area evacuation and to complete the Owner Controlled Area Evacuation actions in Attachment 5. | _____                   |

**CAUTION:**

*IF a condition exists which could jeopardize personnel safety during an evacuation, THEN consider making a plant announcement for personnel to take shelter until the hazard no longer exists.*

- |  |       |
|--|-------|
| 12. Determine any areas to avoid during the evacuation or any special protective measures to be taken by evacuees. Include in plant announcements. | _____ |
| 13. Direct the Control Room to merge the Gaitronics and make an announcement similar to the following.   | _____ |

**PULSE tone. "Attention in the plant. All personnel not presently assigned to an emergency facility are directed to evacuate. Use the Primary Access Point. Engineering, Maintenance, and Operations personnel report to the Main Admin-2 Training Area and standby for further instructions. All other personnel are directed to go home. (repeat message)**

Plant areas to avoid/protective measures (or none): \_\_\_\_\_  
\_\_\_\_\_

- |  |       |
|--|-------|
| 14. Upon report of missing individual(s), implement Search and Rescue in accordance with Attachment 3. | _____ |
|--|-------|

EMERGENCY DIRECTOR

SEARCH AND RESCUE OPERATIONS CHECKLIST

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Action Completed  
Initial

1. If notified that an individual is still within the hazard area, direct the Control Room to merge the Gaitronics and make the following announcement. \_\_\_\_\_

**WARBLE tone. "Attention in the plant. (Name of individual) report your location to the Control Room immediately." (repeat message)**

2. If the individual has not contacted the Control Room within approximately two minutes following the second announcement, perform the following:

2.1 Direct Security to provide information on likely areas to search. \_\_\_\_\_

2.2 Direct the OSC Director to activate the Search and Rescue Team and provide information on specific plant areas to be searched, and provide any protective measure information needed on potential hazards. \_\_\_\_\_

2.3 If the OSC is not operational, assemble a team composed of personnel identified in Section 3.12. Provide information on specific areas to be searched and provide any protective measure information needed on potential hazards. \_\_\_\_\_

2.4 Authorize team members to exceed exposure limits, as necessary, in accordance with EIP-2-012. \_\_\_\_\_

SECURITY COORDINATOR

LIMITED OR BUILDING EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initials

1. Establish controls via card readers, cordons, or other means to prevent access into the evacuated area except by authorized personnel. \_\_\_\_\_
2. Obtain printouts of personnel still in the evacuated area, if card readers control access. If card readers are not available, obtain any information available on personnel that may still be in the evacuated area. \_\_\_\_\_
3. Report accountability results and any missing persons to the Emergency Director, including information on likely areas to search. \_\_\_\_\_
4. At the direction of the Emergency Director, establish normal access, as possible. \_\_\_\_\_

## SECURITY COORDINATOR

## OWNER CONTROLLED AREA EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action CompletedInitialNOTE

*If the Alternate Evacuation Point (South Train Gate) is to be used, make provisions to open it as soon as possible.*

1. When directed, using Attachment 8 or 9 of this procedure and a 1-mile radius map, direct Security personnel to evacuate the Owner Controlled Area (including the Protected Area). If Attachment 9 is used, modify script as needed. The evacuation should be complete within about 30 to 60 minutes of the declaration of the emergency. \_\_\_\_\_
2. Ensure the appropriate gates, doors and vehicle barriers are opened to accommodate the evacuation. \_\_\_\_\_
3. Dispatch any available Officers to the selected Assembly Area, if used. \_\_\_\_\_
4. Contact West Feliciana Sheriff's Office to request traffic and access control assistance. Provide evacuation route (north/south). Request assistance at Assembly Area, as needed. \_\_\_\_\_
5. Within approximately 30 minutes of the declaration, provide Protected Area accountability results to the Emergency Director including information on any unaccounted for individuals and likely areas to search. \_\_\_\_\_
6. Using a RBS one-mile radius map, discuss affected wind sectors and the need to establish special evacuation routes because of a radiological release or other plant conditions (with the RP Coordinator) Evacuation routes should be chosen to lead individuals away from the path of the plume or danger. \_\_\_\_\_
7. Determine buildings that may be impacted if a release should start. Use Attachment 6 strictly as a guideline, as some building changes may have taken place. \_\_\_\_\_
8. Determine priority of buildings to be evacuated. Priority should be given to buildings occupied by the public. \_\_\_\_\_
9. Direct security officers to evacuate the Owner Controlled Area outside of the Protected Area. If an Assembly Area is being used, have Security Officer direct anyone present to evacuate immediately to the Assembly Area along a designated route. \_\_\_\_\_

SECURITY COORDINATOR

OWNER CONTROLLED AREA EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initial

- |     |  |       |
|-----|--|-------|
| 10. | Ensure security officers receive a briefing on potential hazards and any protective measures required. Briefings should include information to be announced to Owner Controlled Area evacuees (including members of the public, visitors, and non-essential employees), applicable radiation hazards, evacuation routes, assembly area and radiological monitoring, as required. | _____ |
| 11. | Establish controls to prevent persons from entering evacuated areas.   | _____ |

## OWNER CONTROLLED AREA BUILDINGS

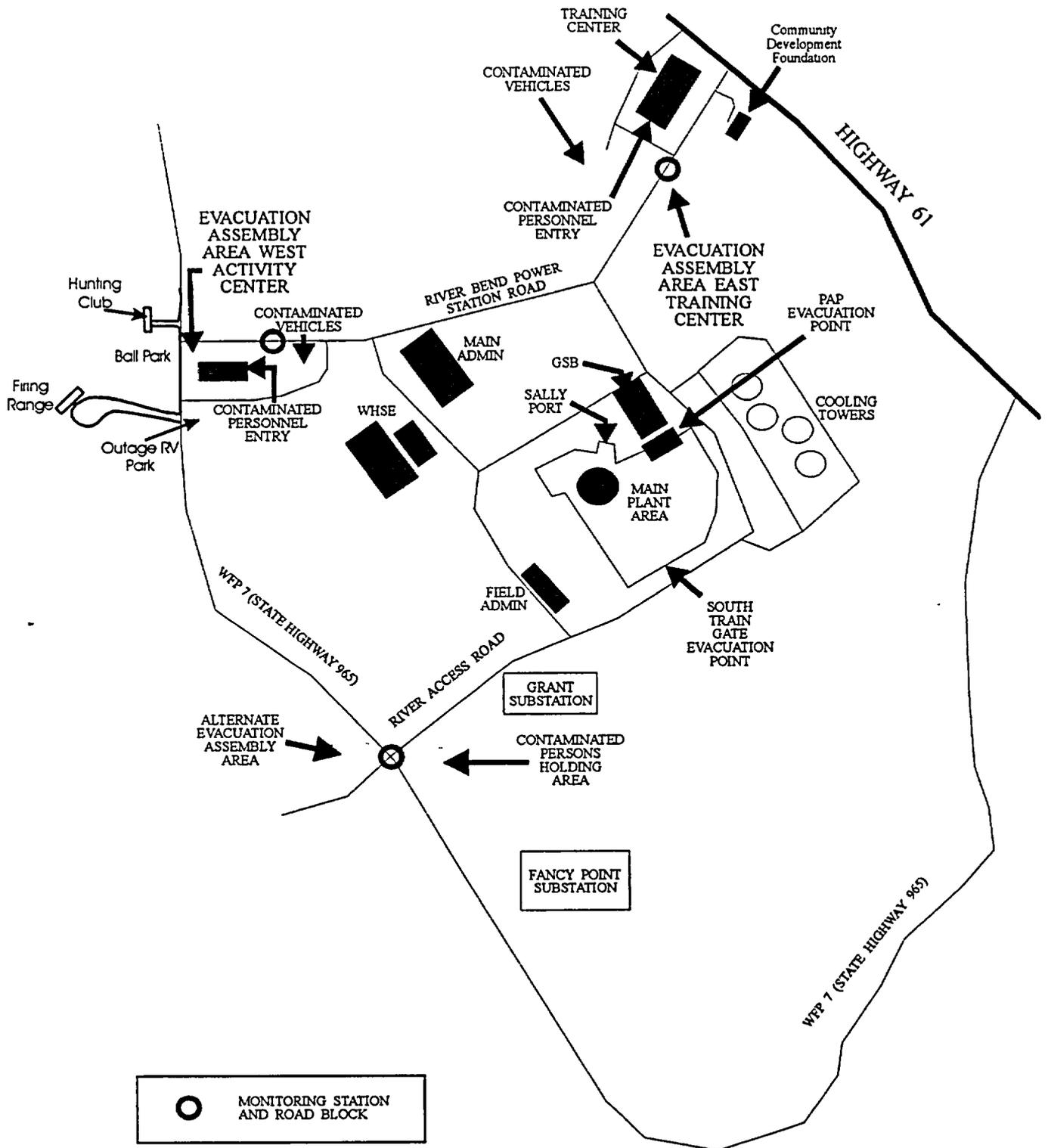
NOTE:

*Evacuation announcement should be made as soon as possible to those areas indicated in bold as they may be occupied by members of the public.*

DIRECTION (USING PLANT NORTH)	WIND SECTOR	BUILDINGS IN OCA	
NE	A	Training Center # 201 Generation Support Building (GSB) # 36	Community Development Foundation # 202 (Old HR Bldg.)
ENE	B	PAP	Generation Support Building (GSB) # 36
E	C	Cooling Tower Complex # 21, 23-27	
ESE	D	Cooling Tower Complex # 21, 23-27	
SE	E	Cooling Tower Complex # 21, 23-27	
SSE	F	Fire Pump House # 48	Hypochlorite Elect. Equip. Building # 41
S	G	Demineralized Water Pump House # 49 Laydown Storage Area # 43 Old Anco Storage Building # 47	Clarifiers # 44 Low Level Radwaste Storage Building # 53
SSW	H	Lube Oil Storage # 51 Ionics Trailer # 250 Turbine Low Press. Rotor Storage # 103 Low Level Radwaste Storage Bldg. # 53	Fancy Point Wastewater Treatment Facility # 35 Old Anco Storage Building # 47
SW	J	Fancy Point	Hazardous Waste Warehouse # 52
WSW	K	Field Administration Building # 64 Intake Structure Insulator Shop # 61 Training # 63	Grant Substation Icehouse # 60 Outside Maintenance Shop # 62
W	L	Field Administration Building # 64 Shop # 70 Area	Maintenance Shops: Pipe Shop # 71 Paint Shop # 72 Welding Fishing
WNW	M	Warehouse Areas # 75, 76, 77, 78	Fishing Area
NW	N	Warehouse Areas # 75, 76, 77, 78 Carpenter Shop # 94 Activity Center # 210 Firing Range # 212 Meteorological Tower # 104	Environmental/Standards Lab Complex # Q79, 79-81 Garage # 95 Rec. Vehicle Park (outage) # LD-5 Ball Park # 214
NNW	P	Garage # 95 Ball Park # 214 Old Stone & Webster Warehouse # 96	Main Administration Building (Includes Fitness Center) #99, 98, 97 Hunting Club # 215

No buildings located in Sectors Q & R.

### EVACUATION POINTS AND ASSEMBLY AREAS



PR00022M.CDR

**OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT  
NO RADIOLOGICAL RELEASE**

During an emergency, if an Owner Controlled Area evacuation is announced, Security Officer(s) will announce the following information to members of the public and non-essential station personnel in the Owner Controlled Area.

**NOTE:**

*Make the evacuation announcement in a calm voice with direct authority.  
Using a public address system device (i.e., bullhorn), make, frequent stops  
at wooded areas and make the announcement.*

**ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.**

**Members of the public and non-essential station personnel are directed to evacuate River Bend property.**

**There is no radiological hazard at this time. Individuals should use their personal vehicle and may use any route to evacuate River Bend property.**

**OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT  
RADIOLOGICAL RELEASE**

During an emergency, if an Owner Controlled Area evacuation is announced, the TSC Security Coordinator (or designee) will use the following as a guideline in developing an appropriate evacuation announcement. Complete the announcement by indicating assembly area to be used. Security Officer(s) will then make the announcement to members of the public and non-essential station personnel in the Owner Controlled Area.

**NOTE:**

*Make the evacuation announcement in a calm voice with direct authority.  
Using a public address system device (i.e., bullhorn), make frequent stops  
at wooded areas and make the announcement.*

**ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.**

**Members of the public and non-essential station personnel are directed to evacuate River Bend property.**

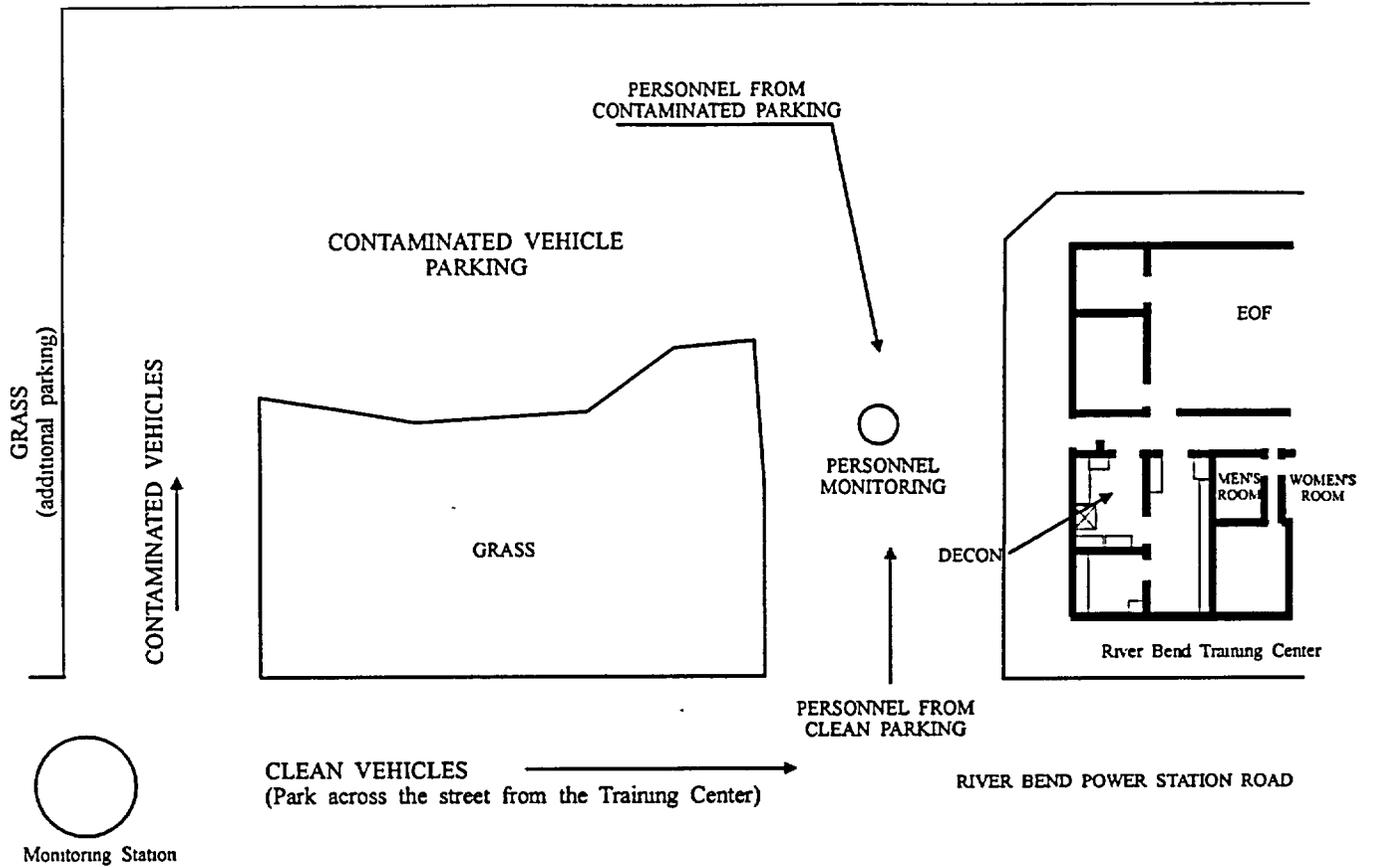
**There is a radiological hazard at this time. For your own safety, proceed by personal vehicle to the:**

\_\_\_\_\_ **East Assembly Area**

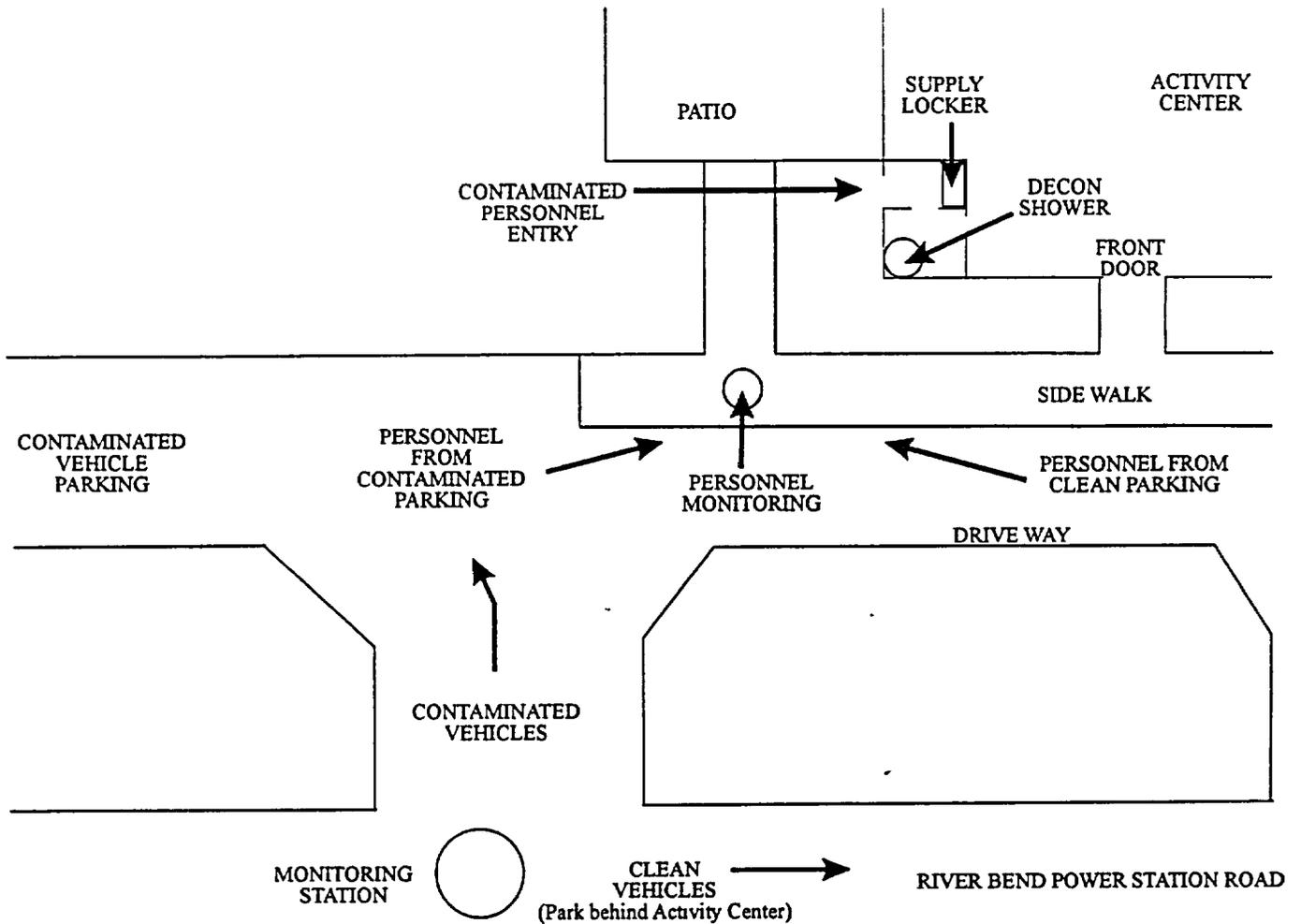
\_\_\_\_\_ **West Assembly Area**

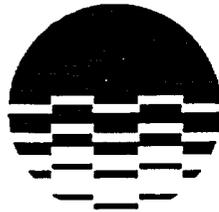
\_\_\_\_\_ **Alternate Assembly Area**

ASSEMBLY AREA EAST LAYOUT  
RIVER BEND TRAINING CENTER



ASSEMBLY AREA WEST LAYOUT  
RIVER BEND ACTIVITY CENTER





**ENTERGY**

**RIVER BEND STATION  
STATION SUPPORT MANUAL  
\*EMERGENCY IMPLEMENTING PROCEDURE**

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***\*EVACUATION, PERSONNEL ACCOUNTABILITY,  
AND SEARCH AND RESCUE***

**PROCEDURE NUMBER:** \*EIP-2-026  
**REVISION NUMBER:** \*14  
**Effective Date:** \* SEP 04 2002

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**NOTE : SIGNATURES ARE ON FILE.**

**RECEIVED**

SEP 04 2002

DOCUMENT CONTROL

\*INDEXING INFORMATION

**REFERENCE USE**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
1 PURPOSE.....	2
2 REFERENCES .....	2
3 DEFINITIONS.....	2
4 RESPONSIBILITIES.....	4
5 GENERAL.....	4
6 PROCEDURE.....	5
7 DOCUMENTATION .....	12
ATTACHMENT 1 - EMERGENCY DIRECTOR - LIMITED OR BUILDING EVACUATION.....	13
ATTACHMENT 2 - EMERGENCY DIRECTOR - OWNER CONTROLLED AREA EVACUATION.....	15
ATTACHMENT 3 - EMERGENCY DIRECTOR - SEARCH AND RESCUE OPERATIONS.....	18
ATTACHMENT 4 - SECURITY COORDINATOR - LIMITED OR BUILDING EVACUATION.....	19
ATTACHMENT 5 - SECURITY COORDINATOR - OWNER CONTROLLED AREA EVACUATION.....	20
ATTACHMENT 6 - OWNER CONTROLLED AREA BUILDINGS .....	22
ATTACHMENT 7 - EVACUATION POINTS AND ASSEMBLY AREAS.....	23
ATTACHMENT 8 - OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT - NO RADIOLOGICAL RELEASE.....	24
ATTACHMENT 9 - OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT - RADIOLOGICAL RELEASE .....	25
ATTACHMENT 10 - ASSEMBLY AREA EAST LAYOUT .....	26
ATTACHMENT 11 - ASSEMBLY AREA WEST LAYOUT .....	27

1     **PURPOSE**

This procedure provides the steps to be followed if a Limited, Building, or Owner Controlled Area Evacuation becomes necessary.

2     **REFERENCES**

- 2.1     Title 10, Code of Federal Regulations, Part 20 (10CFR20), Standards for Protection Against Radiation
- 2.2     River Bend Station Safeguards Contingency Plan
- 2.3     ADM-0060, First Responder Emergency
- 2.4     RBNP-035, Hazardous Material Emergency Response Plan
- 2.5     FPP-0010, Fire Fighting Procedure
- 2.6     PSP-4-413, Safeguards Contingencies
- 2.7     EIP-2-012, Radiation Exposure Controls
- 2.8     EIP-2-016, Operations Support Center
- 2.9     RP-104, Personnel Contamination Event

3     **DEFINITIONS**

- 3.1     Alternate Evacuation Assembly Area - A designated area where evacuees may assemble for radiation monitoring during an Owner Controlled Area evacuation. This assembly area is located at the intersection of West Feliciana Parish (WFP) 7 (State Highway 965) and the River Access Road (see Attachment 7). The evacuation route from the Protected Area is through the Alternate Evacuation Point (South Train Gate). Individuals in the Protected Area will proceed on foot down River Access Road, past Grant Substation to the junction of West Feliciana Parish (WFP) 7 (State Highway 965) to the Alternate Assembly Area. Transportation will be provided at that point. Individuals outside of the Protected Area should follow directions from Security personnel and posted signs.

- 3.2 Alternate Evacuation Point - The alternate egress point from the Protected Area that may be used, if necessary, during an Owner Controlled Area Evacuation. It is sometimes referred to as the "South Train Gate" (see Attachment 7). This is the Evacuation Point used for proceeding to the Alternate Evacuation Assembly Area.
- 3.3 Building Evacuation - The withdrawal of all personnel from one building.
- 3.4 Evacuation Assembly Area East - The Training Center, located at the intersection of the River Bend Power Station Road and the west Training Center parking lot entrance (see Attachment 7). The evacuation route is through the Primary Access Point (PAP) to the River Bend Power Station Road via private vehicle and then to the Training Center.
- 3.5 Evacuation Assembly Area West - The River Bend Activity Center, located near the intersection of the River Bend Power Station Road and West Feliciana Parish (WFP) 7 (State Highway 965) (see Attachment 7). The evacuation route is through the Primary Access Point (PAP) to the River Bend Power Station Road via private vehicle and then to the River Bend Activity Center.
- 3.6 Limited Evacuation-The withdrawal of individuals from a room or area due to a localized hazard.
- 3.7 Limited/Building Evacuation Accountability - Actions taken that attempt to determine the evacuation status of individuals within the Limited/Building area.
- 3.8 Non-essential Personnel - Non-essential personnel includes employees not having emergency assignments, visitors, contractor personnel (excluding Security), and members of the public within the Owner Controlled Area.
- 3.9 Owner Controlled Area Evacuation - The withdrawal of all non-essential personnel from the Owner Controlled Area, which includes the Protected Area, whenever extensive unexpected and uncontrolled hazards exist.
- 3.10 Primary Evacuation Point - For the protected area, the PAP is used (see Attachment 7). This is the Evacuation Point used for proceeding to the Evacuation Assembly Areas East and West.
- 3.11 Protected Area Accountability - Actions taken to determine the evacuation status of individuals within the Protected Area.
- 3.12 Search and Rescue Team - Teams used to locate missing/unaccounted individuals and to provide assistance in removing individuals from the

evacuated area. Search and Rescue Teams should be composed of at least two persons selected from Radiation Protection Technicians, Chemistry Technicians, Nuclear Control Operators/Nuclear Equipment Operators, or First Responders. If one of the team members is not an RP Technician, at least one of the team members must be trained in the use of radiation survey instruments. At least one team member must be trained in search and rescue techniques.

#### 4 **RESPONSIBILITIES**

- 4.1 Emergency Director - implements this procedure if a Site Area Emergency or General Emergency has been declared, or if conditions warrant implementation of a Limited, Building, or Owner Controlled Area Evacuation.
- 4.2 Radiation Protection Coordinator - initiates monitoring and decontamination, as necessary.
- 4.3 Security Coordinator - coordinates the accountability of personnel in an evacuation.

#### 5 **GENERAL**

- 5.1 ALARA principles shall be adhered to prior to initiating an evacuation. Considerations should be given to 1) radiological conditions at the Assembly Points, onsite and along evacuation routes; and 2) whether these conditions can be mitigated prior to evacuees receiving significant exposure.
- 5.2 Plant or site evacuations should be initiated either before or after the passage of a release, and evacuation routes should be chosen such that evacuees travel away from the path of the plume.
- 5.3 The safety of evacuees takes precedence over the monitoring of evacuees and vehicles for contamination control purposes. The monitoring of evacuees and vehicles should be terminated (or not implemented) if monitoring may increase the hazard to individuals.

**PROCEDURE****NOTE**

*The actions of this procedure may be completed in any sequence, however, the sequence presented is recommended.*

**6.1 Limited Evacuation/Building Evacuation**

6.1.1 The Emergency Director should use Attachment 1 as a guideline.

6.1.2 The Radiation Protection Technicians at the assembly location should:

1. Determine if any evacuees are injured:
  - a. Report status to the Emergency Director immediately (or the Operations Support Center (OSC) Director if the OSC is operational).
  - b. Administer first aid procedures to the extent of capability until relieved by the designated First Responders on shift.
  - c. Assist in implementing ADM-0060 until injured persons no longer need assistance or are removed from the assembly location.
2. Assist Security in determining if all persons in the evacuated area have been accounted for.
3. As necessary, perform radiological monitoring of evacuees and implement RP-104.
4. If significant radioactive contamination is found on any individual in the assembly location, notify the Emergency Director (or OSC Director if the OSC is operational) of the individual's evacuation route and that this route may be contaminated.
5. Upon completion of personnel surveys, monitor the assembly location for radioactive contamination and decontaminate or post as applicable.
6. Notify the Emergency Director (or the OSC Director if the OSC is operational) when the above tasks are completed.

**NOTE:**

*If an evacuation is ordered by the Emergency Director, the on duty Security Shift Supervisor will act as the TSC Security Coordinator (for evacuation actions only), until relieved by a qualified individual. While in this capacity, the Security Shift Supervisor will not physically report to the TSC.*

6.1.3 The Security Coordinator should use Attachment 4 as a guideline.

6.2 Owner Controlled Area Evacuation

6.2.1 The Emergency Director should use Attachment 2 as a guideline.

6.2.2 The Radiation Protection Coordinator should:

1. **IF** a radiological release has already occurred, is occurring, or is imminent, **THEN** ensure the dispatch of Radiation Protection Technicians (at least two) to the Assembly Area.
2. Determine the existent or potential hazards in the area and brief the Security Coordinator on the hazards and protective measures necessary to protect Security Officers and individuals within the Owner Controlled Area.
3. Advise the Security Coordinator on affected wind sectors (centerline and two side sectors) and the need to establish special evacuation routes due to a radiological release or other plant conditions.

6.2.3 The Security Coordinator should use Attachment 5 as a guideline.

6.2.4 The Security Shift Supervisor, as directed, should:

**NOTE:**

*Evacuation will be conducted by security personnel not filling security positions required to maintain the station's protective strategy.*

1. Receive an evacuation briefing from the Security Coordinator, if available.
2. Assign available Security Officer(s) to conduct the evacuation of the Owner Controlled Area.

3. Ensure officer(s) assigned evacuation duties obtain one of the OCA evacuation bags in the Access Control Station (ACS).
4. Members of the public may occupy some outlying buildings. Security is responsible to notify those individuals of any radiological hazards, protective measures, and evacuation routes.
5. If directed, dispatch other available officer(s) to the selected Assembly Area to assist in traffic control and an orderly evacuation process.
6. Establish controls to prevent persons from entering evacuated areas.
7. Direct the officer(s) at the security checkpoint to stop all incoming traffic, except those necessary to respond to the plant emergency. Use the Security Authorization List (Emergency Director/Recovery Manager) for authorization to enter the site.
8. Process emergency vehicles through the security checkpoint and Sally Port in accordance with Security procedures.
9. Ensure the additional requirements during emergency evacuation (Event E-1) in the RBS Safeguard Contingency Plan and PSP-4-413 (Safeguards Information) are met.

6.2.5 The Security Officer should:

1. Perform duties as directed.
2. Prior to evacuating the Owner Controlled Area buildings and outside areas, receive a briefing on the evacuation announcement including applicable radiation hazards, evacuation routes, assembly area (if required), and radiation monitoring (if required) for evacuees.

**NOTE:**

*Officers will unlock any gates or buildings or open any vehicle barriers to facilitate an evacuation, as needed.*

3. **IF** the evacuation information includes directions to the West (Activity Center) or Alternate Assembly Area, **THEN** unlock the appropriate gate(s) and open vehicle barriers to allow egress.

4. Obtain one of the Owner Controlled Area (OCA) evacuation bags from the Access Control Station (ACS). The bag(s) should contain the following equipment/tools:

- \* Keys to all outlying buildings
- \* Portable public address device (w/batteries, if applicable)
- \* Evacuation Announcement script (Attachment 8 or 9)
- \* List of buildings in the OCA to evacuate (Attachment 6)
- \* RBS 1-mile radius site map
- \* Bolt cutters

5. Evacuation activities:

**NOTE:**

*It is not necessary to enter outlying buildings where all entrances are padlocked.*

- a. Enter each building and announce the evacuation using the prescribed message.
- b. Avoid lingering in buildings to answer questions.
- c. A search of every office is not necessary.
- d. An evacuation announcement is not necessary in buildings/areas where Security has confirmed that no personnel are present.
- e. Single story buildings should be entered and the announcement made from a location adjacent to the doorway. It is not necessary to walk through an entire building to make evacuation announcements. Multiple entryways, such as those at Field Administration, Main Administration, or other similar locations, should be entered and an announcement made from an appropriate location.
- f. Multi-story office buildings should be entered on each floor and the announcement made from an appropriate location (e.g., each floor of the Generation Support Building may be notified by exiting the elevator/stairwell on each floor and making the announcement from a location near the elevator/stairwell).

- g. Evacuation Officer(s) may designate personnel inside the buildings to spread the evacuation announcement, provided the employee(s) are given appropriate information, such as applicable radiation hazards, evacuation routes, assembly areas, and required monitoring.
- h. The evacuation Officer(s) should contact the Security Shift Supervisor (or designee) when a building or area has been completed to assist security supervision in tracking the progress of the OCA evacuation.
- i. When passing wooded areas or parked vehicles along plant roads, make frequent stops and make announcements from the vehicle window.

6.2.6 The Radiation Protection Technicians at the Assembly Area should:

1. Obtain radios and appropriate equipment for monitoring and decontamination at Alternate Assembly Area.
2. Establish communications with the Radiation Protection Coordinator.
3. When surveying vehicles, have driver and passengers remain in the vehicle until the survey of the outside of the vehicle is complete.
4. Survey areas outside of the vehicle such as:
  - front bumper
  - grill
  - tires
  - fender wells
  - door handles
  - rear bumper
  - outside of air cleaner

5. IF vehicle is contaminated, THEN have evacuee move vehicle to designated parking area and assemble using the following guidelines:
  - a. IF the Assembly Area East is used, THEN direct evacuees to park their vehicles in the Training Center parking lot in a designated location for isolation and have the individuals assemble outside the West end entrance to the Emergency Operations Facility (EOF) (see Attachment 10).
  - b. IF the Assembly Area West is used, THEN direct evacuees to park their vehicles in the River Bend Activity Center parking lot in a designated location for isolation of the vehicles and have the individuals assemble on the East side of the River Bend Activity Center (see Attachment 11).
  - c. IF the Alternate Assembly Area is used, THEN direct evacuees to assemble in a designated isolated location and request guidance from the Radiation Protection Coordinator in the TSC or the Emergency Director.
6. Record the location and readings of any contamination found.
7. Survey evacuees from the clean vehicle parking area and decontaminate, as necessary, in accordance with RP-104. If no contamination is found, direct evacuees to leave the area.
8. Survey evacuees from the contaminated vehicle parking area and decontaminate, as necessary, in accordance with RP-104. If no contamination is found, direct evacuees to a "clean waiting area" or offsite.
9. Record the location and readings of any contamination found.
10. When time permits and after completion of personnel decontamination, begin decontamination of vehicles.
11. If necessary, request back-up Radiation Protection assistance from the Radiation Protection Coordinator in the TSC.

12. Notify the Radiation Protection Coordinator when the following tasks are completed:
  - a. All personnel and vehicles identified as contaminated have been decontaminated or have been detained for further evaluation and possible additional decontamination.
  - b. All areas and equipment requiring decontamination have been decontaminated or identified for further evaluation and possible additional decontamination.
13. Return documentation to the Radiation Protection Coordinator.

### 6.3 Search and Rescue Operations

6.3.1 The Emergency Director should use Attachment 3 as a guideline.

6.3.2 The Radiation Protection Coordinator should:

1. Obtain information on likely areas to be searched from the Emergency Director or Security Coordinator.
2. Contact and consult with the Senior Radiation Protection Technician regarding conditions and precautions necessary to be used in the area(s) of the search, and appropriate protective equipment and dosimetry.

6.3.3 The Operations Support Center Director should:

**NOTE:**

*At least one member of the Search and Rescue Team must be survey meter trained.*

1. Record the team members' names, time the team is dispatched and dosimetry information, including accumulated effective dose equivalent for each team member in the OSC log.
2. Brief team members on areas to be searched and document all team actions during search and rescue operations.
3. WHEN the Search and Rescue Team reports finding the missing individual(s), THEN contact the Emergency Director to report the status of the individual(s).

6.3.4 The Senior Radiation Protection Technician should:

1. Using the team briefing checklist in EIP-2-016, brief the team members on the radiological hazards involved, emergency exposure limits and specify dosimetry and protective clothing/equipment to be utilized.
2. Specify routes for the team to follow in order to minimize radiation exposures of team members, as possible.
3. Caution the team members to keep the OSC informed of accumulated exposures.

6.3.5 The Search and Rescue Team members should:

1. Receive a briefing from the Senior Radiation Protection Technician and the OSC Director/Manager.
2. If the missing individual is found and requires first aid treatment:
  - a. Contact the Control Room and request announcement over the Page Party/Gaitronics for dispatch of First Responders.
  - b. Make a quick assessment of the individual's condition and the need to move the person from the present location.
  - c. If there is not an immediate hazard from the present surroundings, administer first aid on-the-spot, if qualified.
3. Notify the OSC Director of the status of the individual(s).
4. Upon completion of the assignment, report accumulated exposures to the Senior Radiation Protection Technician.

7

**DOCUMENTATION**

Attachments 1-5 of this procedure will be sent to Permanent Plant Files (PPF) per EPP-2-100 by the Manager - Emergency Preparedness.

EMERGENCY DIRECTOR

LIMITED OR BUILDING EVACUATION

**DISCUSSION:** *In general, limited or building evacuations will be in accordance with the following guidelines:*

1. *A limited evacuation may be implemented when any of the following conditions exist:*
  - a. *Unexpected area radiation monitor high level alarms are received.*
  - b. *Unexpected high airborne activity as identified by the activation of a continuous air monitor or RP air sample analysis.*
  - c. *Unexpected increase of radioactive surface contamination in an area previously designated clean or in excess of expected levels as identified on a Radiation Work Permit.*
  - d. *Upon discovery of a large radioactive (or suspected radioactive) liquid spill.*
  - e. *Other emergency conditions occur, such as fire or hazardous gas encounters, that may endanger human health or safety.*
  
2. *A building evacuation may be declared when either of the following occur:*
  - a. *Criteria for a limited evacuation are exceeded in two or more large operating areas within one building;*

OR

  - b. *An unexpected or uncontrolled exposure rate in excess of the expected dose rate as indicated by an area radiation monitor alarm within a single building.*

EMERGENCY DIRECTOR  
LIMITED OR BUILDING EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initials

ACTIONS:

1. Determine an assembly location (normally the second floor hallway of the Services Building outside of the CAA). If the second floor hallway of the Services Building is included in the hazard area, designate an alternate location for evacuated personnel. \_\_\_\_\_
2. Direct RP to dispatch a Radiation Protection Technician to assembly location for personnel monitoring, as necessary. \_\_\_\_\_
3. Direct Security to prepare for a Limited/Building Evacuation and complete the Limited/Building Evacuation actions of Attachment 4. \_\_\_\_\_
4. Determine any areas to avoid during evacuation or any special protective measures to be taken by evacuees. Include these in plant announcement. \_\_\_\_\_
5. Direct the Control Room to merge the Gaitronics and make the following announcement. \_\_\_\_\_

**PULSE tone. "Attention in the plant. Evacuate the (specify area or building) and assemble at the (second floor hallway of the Services Building or alternate location)" (repeat message).**

Plant areas to avoid/protective measures (or none): \_\_\_\_\_  
\_\_\_\_\_

6. Implement ADM-0060, First Responder Emergencies, as necessary. \_\_\_\_\_
7. Implement RBNP-035, Hazardous Material Emergency Response Plan, as necessary. \_\_\_\_\_
8. Implement FPP-0010, Fire Fighting Procedure, as necessary. \_\_\_\_\_
9. Upon report of missing individual(s), implement Search and Rescue in accordance with Attachment 3. \_\_\_\_\_
10. When appropriate, direct Control Room to inform personnel that the hazard no longer exists. \_\_\_\_\_
11. Forward the original of this checklist to the Manager - Emergency Preparedness. \_\_\_\_\_

EMERGENCY DIRECTOR

OWNER CONTROLLED AREA EVACUATION

**DISCUSSION:**

The decision to evacuate members of the public and non-essential station personnel or shelter them in place should be based on the course of action which presents minimum risk to individuals. Examples of extenuating conditions that may result in deciding against or delaying an evacuation are:

1. An ongoing security threat (consult with the Security Coordinator to aid in determining the safest course of action.)
2. Inclement weather (e.g. tornado, high winds, hazardous road conditions that may preclude a safe evacuation).
3. Radiological or toxic gas hazard exists. (Determine if evacuation actions can be accomplished prior to arrival of the release. Owner Controlled Area evacuation is estimated to take 30-60 minutes.)

**ACTIONS:**

1. IF a radiological release has NOT occurred AND is NOT judged imminent, THEN Go To Step 11.
2. IF a radiological release has occurred, is in progress, or is judged to be imminent, THEN Go To Step 3.
3. Select an Evacuation Point, Assembly Area, and Staging Area using the following guidelines:

Wind Direction From	Evacuation Point	Assembly Area	Staging Area
> 125° - ≤ 260°	South Train Gate	Alternate Assembly Area	Field Admin Training Area
> 260° - ≤ 35°	PAP	Training Center <u>OR</u> Activity Center (Back-up)	MA-2 Training Area
> 35° - ≤ 125°	PAP	Training Center	GSB Cafeteria

EMERGENCY DIRECTOR  
OWNER CONTROLLED AREA EVACUATION

	<u>Action Completed</u>
	<u>Initial</u>
4. Direct RP to dispatch Radiation Protection Technicians to the selected Assembly Area to monitor and decontaminate evacuees as necessary.	_____
5. Direct Security to prepare for an Owner Controlled Area evacuation using the selected Assembly Area and to complete the Owner Controlled Area Evacuation actions in Attachment 5.	_____

**CAUTION:**

*IF a condition exists which could jeopardize personnel safety during an evacuation, THEN consider making a plant announcement for personnel to take shelter until the hazard no longer exists.*

6. Determine any areas to avoid during the evacuation or any special protective measures to be taken by evacuees. Include in plant announcements.	_____
7. Direct the Control Room to merge the Gaitronics and make an announcement similar to the following:	_____

**PULSE tone. "Attention in the plant. All personnel not presently assigned to an emergency facility are directed to evacuate. Use the (specify the South Train Gate or Primary Access Point). Engineering, Maintenance, and Operations personnel report to the (specify Field Admin Training Area or Main Admin-2 Training Area or GSB Cafeteria) and standby for further instructions. All other personnel are directed to proceed to the evacuation assembly area (specify Alternate Assembly Area or Training Center or Activity Center). (Repeat message)**

Plant areas to avoid/protective measures (or none): \_\_\_\_\_  
\_\_\_\_\_

8. If the Alternate Assembly Area is being used, Protected Area personnel shall walk to the Alternate Assembly Area. Direct the Communicator to request that the Louisiana Office of Emergency Preparedness (LOEP) provide transportation for evacuees as necessary.	_____
9. At a Site Area Emergency or higher, direct relocation of JIC, if EOF is not operational.	_____

EMERGENCY DIRECTOR  
OWNER CONTROLLED AREA EVACUATION

- |  | <u>Action Completed</u> |
|--|-------------------------|
|  | <u>Initial</u>          |
| 10. Continue at Step 14.   | _____                   |
| 11. Direct Security to prepare for an Owner Controlled Area evacuation and to complete the Owner Controlled Area Evacuation actions in Attachment 5. | _____                   |

**CAUTION:**

*IF a condition exists which could jeopardize personnel safety during an evacuation, **THEN** consider making a plant announcement for personnel to take shelter until the hazard no longer exists.*

- |  |       |
|--|-------|
| 12. Determine any areas to avoid during the evacuation or any special protective measures to be taken by evacuees. Include in plant announcements. | _____ |
| 13. Direct the Control Room to merge the Gaitronics and make an announcement similar to the following.   | _____ |

**PULSE tone. "Attention in the plant. All personnel not presently assigned to an emergency facility are directed to evacuate. Use the Primary Access Point. Engineering, Maintenance, and Operations personnel report to the Main Admin-2 Training Area and standby for further instructions. All other personnel are directed to go home. (repeat message)**

Plant areas to avoid/protective measures (or none): \_\_\_\_\_  
\_\_\_\_\_

- |  |       |
|--|-------|
| 14. Upon report of missing individual(s), implement Search and Rescue in accordance with Attachment 3. | _____ |
|--|-------|

EMERGENCY DIRECTOR  
SEARCH AND RESCUE OPERATIONS CHECKLIST

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Action Completed  
Initial

1. If notified that an individual is still within the hazard area, direct the Control Room to merge the Gaitronics and make the following announcement. \_\_\_\_\_

**WARBLE** tone. "Attention in the plant. (Name of individual) report your location to the Control Room immediately." (repeat message)

2. If the individual has not contacted the Control Room within approximately two minutes following the second announcement, perform the following:
- 2.1 Direct Security to provide information on likely areas to search. \_\_\_\_\_
  - 2.2 Direct the OSC Director to activate the Search and Rescue Team and provide information on specific plant areas to be searched, and provide any protective measure information needed on potential hazards. \_\_\_\_\_
  - 2.3 If the OSC is not operational, assemble a team composed of personnel identified in Section 3.12. Provide information on specific areas to be searched and provide any protective measure information needed on potential hazards. \_\_\_\_\_
  - 2.4 Authorize team members to exceed exposure limits, as necessary, in accordance with EIP-2-012. \_\_\_\_\_

**SECURITY COORDINATOR**  
**LIMITED OR BUILDING EVACUATION**

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initials

1. Establish controls via card readers, cordons, or other means to prevent access into the evacuated area except by authorized personnel. \_\_\_\_\_
2. Obtain printouts of personnel still in the evacuated area, if card readers control access. If card readers are not available, obtain any information available on personnel that may still be in the evacuated area. \_\_\_\_\_
3. Report accountability results and any missing persons to the Emergency Director, including information on likely areas to search. \_\_\_\_\_
4. At the direction of the Emergency Director, establish normal access, as possible. \_\_\_\_\_

SECURITY COORDINATOR

OWNER CONTROLLED AREA EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initial

NOTE

*If the Alternate Evacuation Point (South Train Gate) is to be used, make provisions to open it as soon as possible.*

1. When directed, using Attachment 8 or 9 of this procedure and a 1-mile radius map, direct Security personnel to evacuate the Owner Controlled Area (including the Protected Area). If Attachment 9 is used, modify script as needed. The evacuation should be complete within about 30 to 60 minutes of the declaration of the emergency. \_\_\_\_\_
2. Ensure the appropriate gates, doors and vehicle barriers are opened to accommodate the evacuation. \_\_\_\_\_
3. Dispatch any available Officers to the selected Assembly Area, if used. \_\_\_\_\_
4. Contact West Feliciana Sheriff's Office to request traffic and access control assistance. Provide evacuation route (north/south). Request assistance at Assembly Area, as needed. \_\_\_\_\_
5. Within approximately 30 minutes of the declaration, provide Protected Area accountability results to the Emergency Director including information on any unaccounted for individuals and likely areas to search. \_\_\_\_\_
6. Using a RBS one-mile radius map, discuss affected wind sectors and the need to establish special evacuation routes because of a radiological release or other plant conditions (with the RP Coordinator) Evacuation routes should be chosen to lead individuals away from the path of the plume or danger. \_\_\_\_\_
7. Determine buildings that may be impacted if a release should start. Use Attachment 6 strictly as a guideline, as some building changes may have taken place. \_\_\_\_\_
8. Determine priority of buildings to be evacuated. Priority should be given to buildings occupied by the public. \_\_\_\_\_
9. Direct security officers to evacuate the Owner Controlled Area outside of the Protected Area. If an Assembly Area is being used, have Security Officer direct anyone present to evacuate immediately to the Assembly Area along a designated route. \_\_\_\_\_

SECURITY COORDINATOR

OWNER CONTROLLED AREA EVACUATION

Date: \_\_\_\_\_ Time: \_\_\_\_\_

Action Completed  
Initial

- 10. Ensure security officers receive a briefing on potential hazards and any protective measures required. Briefings should include information to be announced to Owner Controlled Area evacuees (including members of the public, visitors, and non-essential employees), applicable radiation hazards, evacuation routes, assembly area and radiological monitoring, as required. \_\_\_\_\_
  
- 11. Establish controls to prevent persons from entering evacuated areas. \_\_\_\_\_

OWNER CONTROLLED AREA BUILDINGS

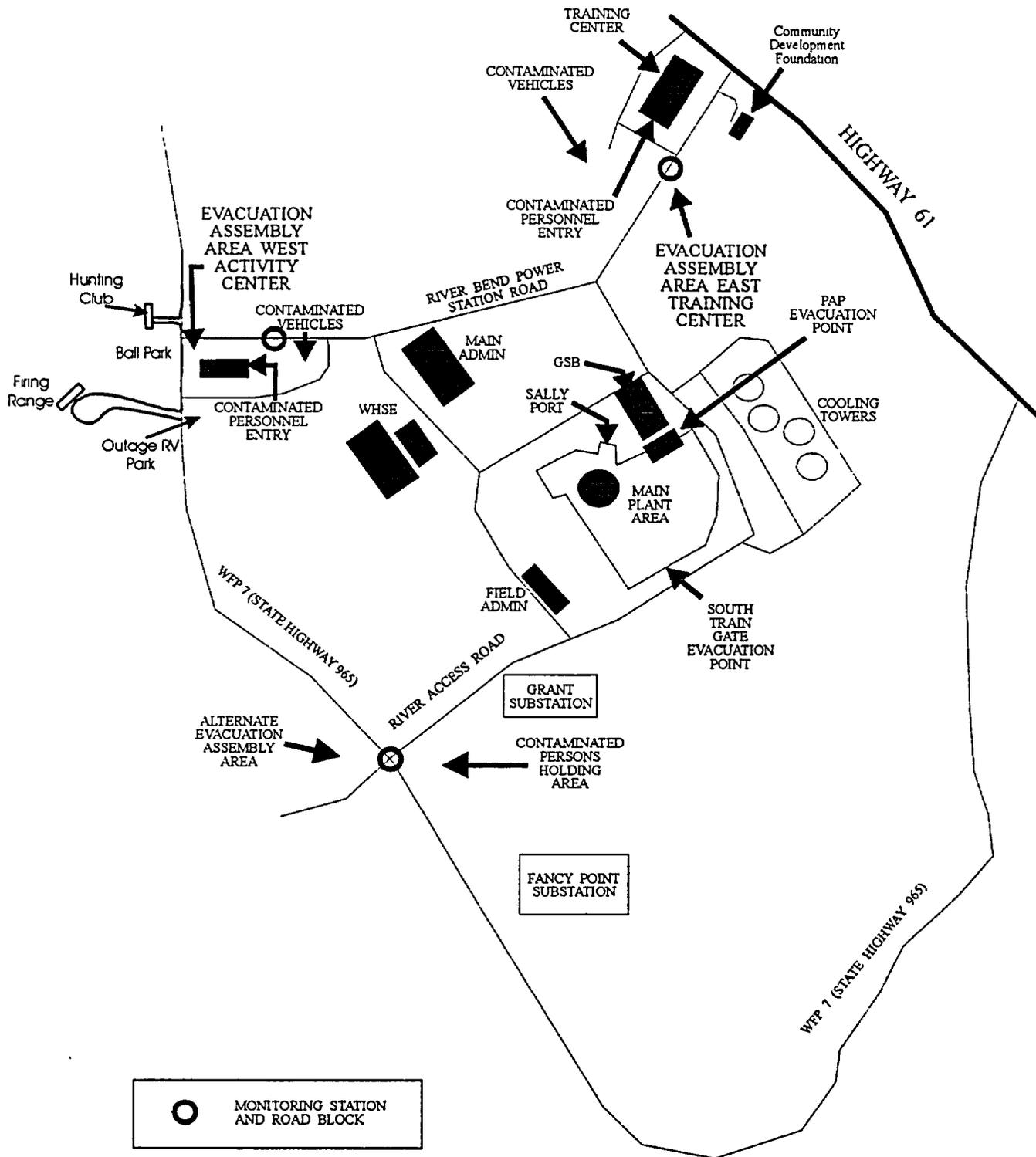
NOTE:

*Evacuation announcement should be made as soon as possible to those areas indicated in bold as they may be occupied by members of the public.*

DIRECTION (USING PLANT NORTH)	WIND SECTOR	BUILDINGS IN OCA	
NE	A	Training Center # 201 Generation Support Building (GSB) # 36	Community Development Foundation # 202 (Old HR Bldg.)
ENE	B	PAP	Generation Support Building (GSB) # 36
E	C	Cooling Tower Complex # 21, 23-27	
ESE	D	Cooling Tower Complex # 21, 23-27	
SE	E	Cooling Tower Complex # 21, 23-27	
SSE	F	Fire Pump House # 48	Hypochlorite Elect. Equip. Building # 41
S	G	Demineralized Water Pump House # 49 Laydown Storage Area # 43 Old Anco Storage Building # 47	Clarifiers # 44 Low Level Radwaste Storage Building # 53
SSW	H	Lube Oil Storage # 51 Ionics Trailer # 250 Turbine Low Press. Rotor Storage # 103 Low Level Radwaste Storage Bldg. # 53	Fancy Point Wastewater Treatment Facility # 35 Old Anco Storage Building # 47
SW	J	Fancy Point	Hazardous Waste Warehouse # 52
WSW	K	Field Administration Building # 64 Intake Structure Insulator Shop # 61 Training # 63	Grant Substation Icehouse # 60 Outside Maintenance Shop # 62
W	L	Field Administration Building # 64 Shop # 70 Area	Maintenance Shops: Pipe Shop # 71 Paint Shop # 72 Welding Fishing
WNW	M	Warehouse Areas # 75, 76, 77, 78	Fishing Area
NW	N	Warehouse Areas # 75, 76, 77, 78 Carpenter Shop # 94 Activity Center # 210 Firing Range # 212 Meteorological Tower # 104	Environmental/Standards Lab Complex # Q79, 79-81 Garage # 95 Rec. Vehicle Park (outage) # LD-5 Ball Park # 214
NNW	P	Garage # 95 Ball Park # 214 Old Stone & Webster Warehouse # 96	Main Administration Building (Includes Fitness Center) #99, 98, 97 Hunting Club # 215

No buildings located in Sectors Q & R.

### EVACUATION POINTS AND ASSEMBLY AREAS



PR0022M.CDR

**OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT  
NO RADIOLOGICAL RELEASE**

During an emergency, if an Owner Controlled Area evacuation is announced, Security Officer(s) will announce the following information to members of the public and non-essential station personnel in the Owner Controlled Area.

**NOTE:**

*Make the evacuation announcement in a calm voice with direct authority.  
Using a public address system device (i.e., bullhorn), make, frequent stops  
at wooded areas and make the announcement.*

**ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.**

**Members of the public and non-essential station personnel are directed to evacuate River Bend property.**

**There is no radiological hazard at this time. Individuals should use their personal vehicle and may use any route to evacuate River Bend property.**

**OWNER CONTROLLED AREA EVACUATION ANNOUNCEMENT  
RADIOLOGICAL RELEASE**

During an emergency, if an Owner Controlled Area evacuation is announced, the TSC Security Coordinator (or designee) will use the following as a guideline in developing an appropriate evacuation announcement. Complete the announcement by indicating assembly area to be used. Security Officer(s) will then make the announcement to members of the public and non-essential station personnel in the Owner Controlled Area.

**NOTE:**

*Make the evacuation announcement in a calm voice with direct authority.  
Using a public address system device (i.e., bullhorn), make frequent stops  
at wooded areas and make the announcement.*

**ATTENTION ALL PERSONNEL. ATTENTION ALL PERSONNEL.**

**Members of the public and non-essential station personnel are directed to evacuate River Bend property.**

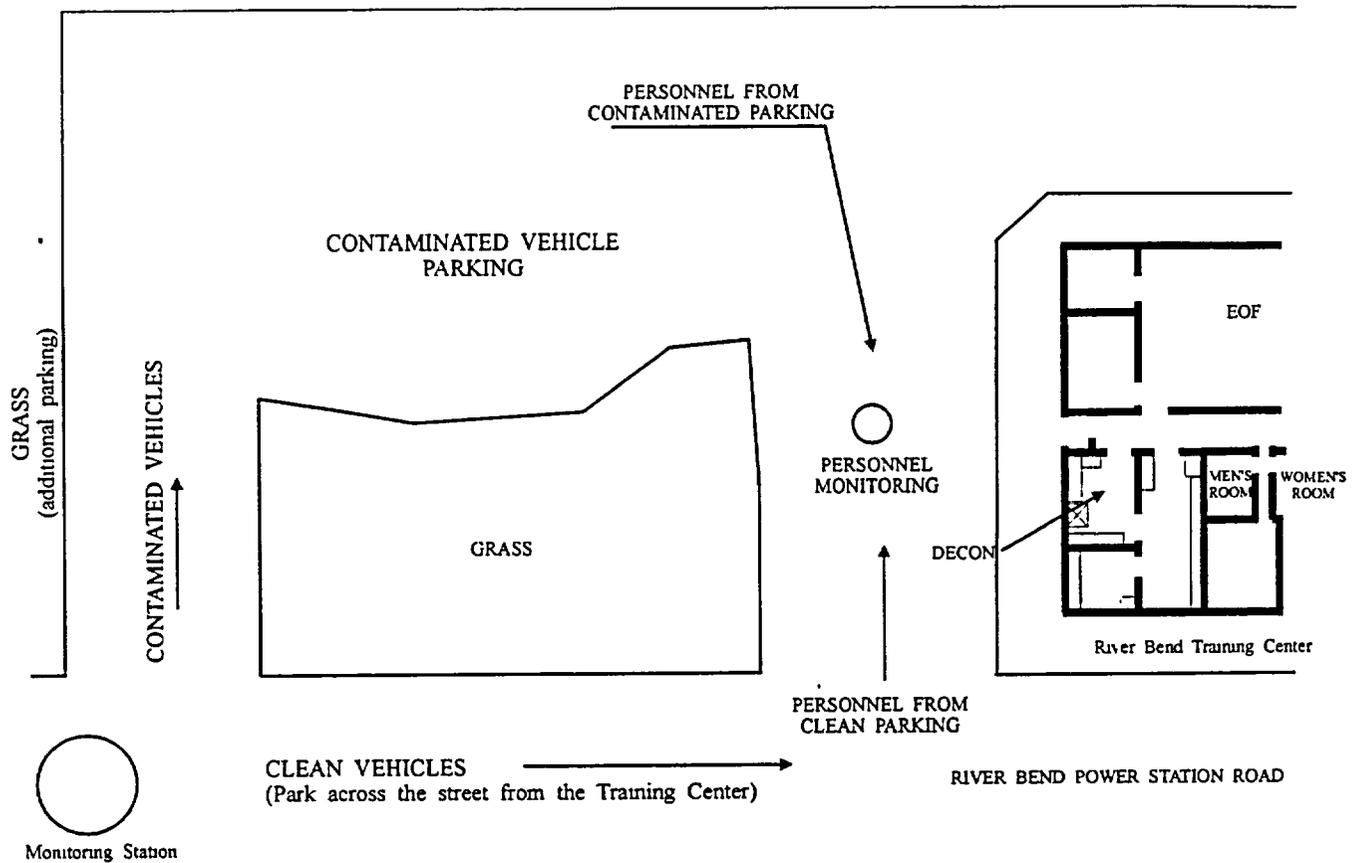
**There is a radiological hazard at this time. For your own safety, proceed by personal vehicle to the:**

\_\_\_\_\_ East Assembly Area

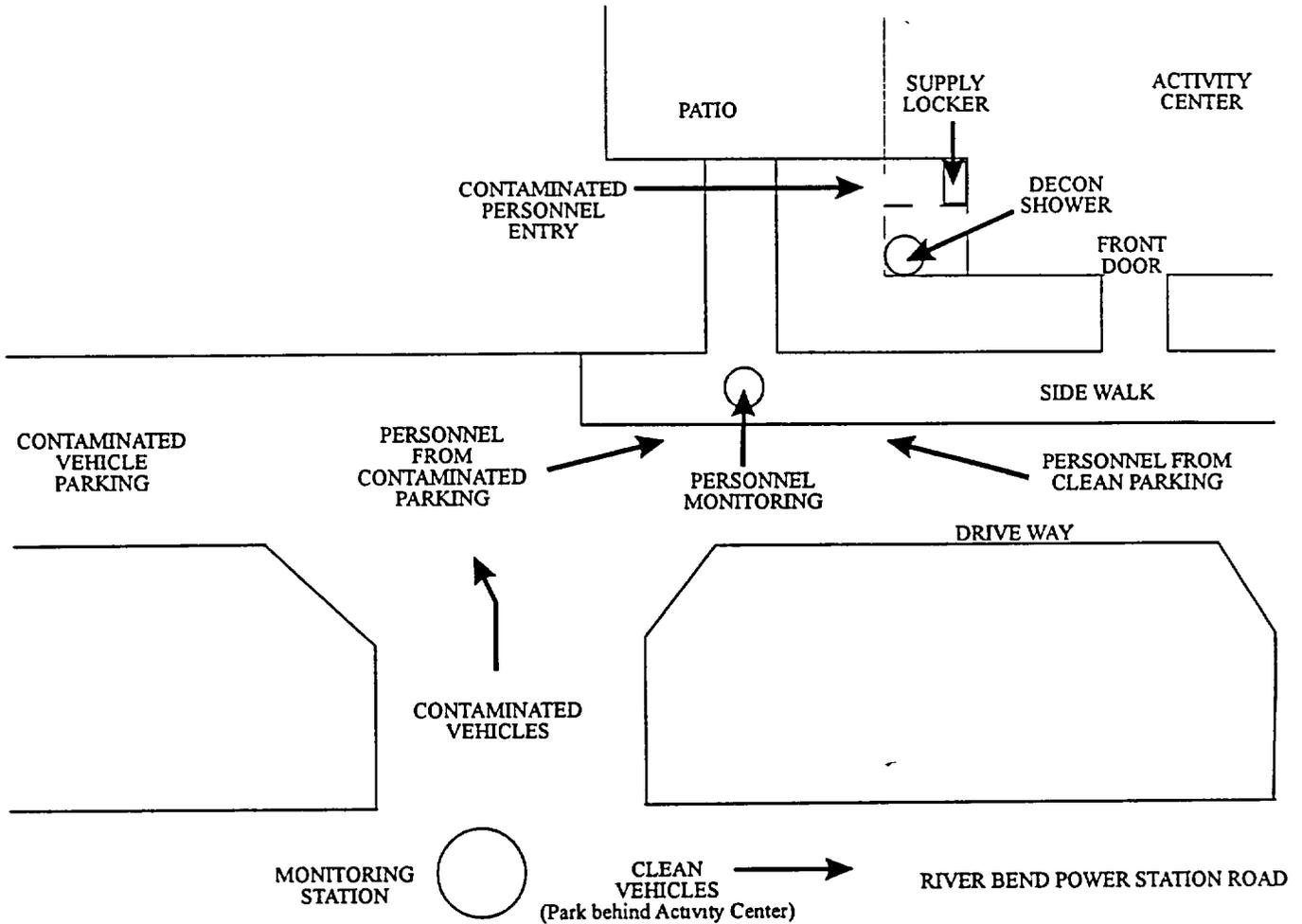
\_\_\_\_\_ West Assembly Area

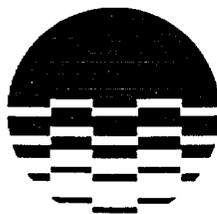
\_\_\_\_\_ Alternate Assembly Area

ASSEMBLY AREA EAST LAYOUT  
RIVER BEND TRAINING CENTER



ASSEMBLY AREA WEST LAYOUT  
RIVER BEND ACTIVITY CENTER





**ENTERGY**

**RIVER BEND STATION  
STATION SUPPORT MANUAL  
\*EMERGENCY IMPLEMENTING PROCEDURE**

---

***\*OFFSITE DOSE CALCULATIONS***

**PROCEDURE NUMBER:** \*EIP-2-024  
**REVISION NUMBER:** \*20  
**Effective Date:** \* SEP 10 2002

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**NOTE : SIGNATURES ARE ON FILE.  
\*INDEXING INFORMATION**

**RECEIVED**

SEP 10 2002

DOCUMENT CONTROL

**REFERENCE USE**

**TABLE OF CHANGES**

LETTER DESIGNATION TRACKING NUMBER	DETAILED DESCRIPTION OF CHANGES

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE NO.</u>
1 PURPOSE.....	3
2 REFERENCES .....	3
3 DEFINITIONS .....	3
4 RESPONSIBILITIES .....	3
5 GENERAL.....	4
6 PROCEDURE.....	6
7 DOCUMENTATION .....	16
ATTACHMENT 1 - CADAP DOSE CALCULATIONS .....	17
ATTACHMENT 2 - ESP EXPORT FILE.....	22
ATTACHMENT 3 - CADAP OUTPUT SCREEN (TYPICAL) .....	23
ATTACHMENT 4 - ALTERNATE METHOD OF DETERMINING STABILITY CLASS .....	24
ATTACHMENT 5 - DRMS METEOROLOGICAL DATA .....	29
ATTACHMENT 6 - CORE STATE DETERMINATION .....	30
ATTACHMENT 7 - DOSIMETER READINGS TO TEDE CONVERSION .....	31
ATTACHMENT 8 - NOBLE GAS AND IODINE RELEASE RATE DETERMINATION.....	33

## 1 PURPOSE

- 1.1 This procedure provides guidance on the methodology for using the Computer Aided Dose Assessment Program (CADAP) software program to predict offsite radiation dose resulting from an actual or potential release of radioactive materials from the plant.
- 1.2 This procedure only provides guidance on using the software to perform offsite dose projections. When offsite dose projection calculations are used to make an emergency classification or Protective Action Recommendation the actual, best known or anticipated variables and conditions will be used in the calculation. Users can perform calculations using other than actual variables and conditions such as anticipating changes or evaluating different conditions or scenarios.

## 2 REFERENCES

- 2.1 RPP-0034, Operation of the General Atomic Digital Radiation Monitoring System CRT
- 2.2 RSP-0008, Offsite Dose Calculation Manual (ODCM)

## 3 DEFINITIONS

- 3.1 Deposition Calculation – Projected whole body external gamma doses at particular locations within the 50 mile EPZ during the first and second years and over the 50 year period after the incident. This information is useful in the recovery phase after an accident.
- 3.2 Projected Dose - The calculated dose that would be received by individuals in the offsite environment if no protective actions were taken following a release of radioactive materials.

## 4 RESPONSIBILITIES

- 4.1 The onshift Chemistry Technician is responsible for dose projections in the Control Room prior to activation of the TSC.

- 4.2 The Chemistry Core Damage Assessment Coordinator should perform dose projection calculations in the TSC, as necessary, until the EOF is operational.
- 4.3 The Assistant Radiological Assessment Coordinator (ARAC) is responsible for dose projections following activation of the EOF.
- 4.4 The Radiological Assessment Coordinator (RAC) is responsible for reviewing dose projections.
- 4.5 The Radiation Protection Advisor (RPA) or the Radiation Protection Coordinator (RPC), if the EOF is not operational, is responsible for reviewing dose projections and field team data, for completing applicable sections of the Notification Message Form, and providing this information to the Recovery Manager.

5 **GENERAL**

- 5.1 The minimum information required to use this procedure and the sources of that information are:

**CAUTION**

*The Meteorological Tower remains on Central Standard Time (CST) throughout the year.*

- 5.1.1. Wind direction, wind speed, and Delta T are available from the RM-21 (located in the TSC and EOF) and the AMI-80 (located in the Control Room, Environmental Services Office Building and the Meteorological Tower).
- 5.1.2. An estimate of the core state - no damage, clad damage or fuel melt (Based on Attachment 6).
- 5.1.3. An indication of the quantity of radioactivity being released. This can be a release rate (DRMS), activity in containment (Control Room or DRMS), Field Monitoring Team instrument readings (from field team) or an effluent sample (Chemistry).

- 5.2 Integrated doses calculated by CADAP use the isotopic dose factors from EPA-400-R-92-001 and include a four-day direct dose and resuspension dose factor for deposited radionuclides using the EPA methodology. Dose rates displayed for TEDE and Thyroid CDE are based on a one-hour inhalation period at the standard breathing rate postulated by 10CFR20.1003. **No considerations are included for particle sizes, variable settling velocities, virtual stack heights, variable breathing rates, sex specific variables or chemical mitigation factors.**
- 5.3 Information retrieval for CADAP may be from one of three sources: live plant data, Simulator data, or all manual data entered by the user. Using any one of the three modes of CADAP will provide the same result if the same data is entered for each calculation.
- 5.4 CADAP is connected to a network server (PI-Server) for live plant data and meteorological information, thus requiring little input from the user. Effluent monitor data, PAM monitor data, meteorological data, core state, source term reduction factors, and time after shutdown are entered from the network server. The simulator mode of CADAP receives data from a simulator network server when running. The user can always override the computer inputs should he/she have better information.
- 5.5 CADAP uses self-explanatory forms for the user to complete to perform calculations. Further explanation and guidance to complete the form fields used for offsite dose projection are provided in Attachment 1.
- 5.6 CADAP users can perform calculations using variables and conditions that are not consistent with actual conditions. This is performed to anticipate possible conditions and to compare different dose projection scenarios.
- 5.7 When CADAP is being provided with Plant or Simulator inputs, the software will attempt to determine core state, source term reduction factors and time of shutdown. The input parameters and values CADAP uses to make these determinations are listed in Attachment 1. The CADAP selected inputs may be different than the actual conditions known by the user. Therefore, it is a good practice for the user to self check to verify correct input parameters on each dose calculation.

**PROCEDURE****NOTE**

*The actions of this procedure may be completed in any sequence. When offsite dose projection calculations are used to make an emergency classification or Protective Action Recommendation the actual, best known or anticipated variables and conditions will be used in the calculation.*

- 6.1 The onshift Chemistry Technician, the Chemistry Core Damage Assessment Coordinator in the TSC or the ARAC should perform the following steps when directed by the Recovery Manager/Emergency Director to initiate offsite dose assessment:
- 6.1.1. Start up CADAP computer, if not running.
  - 6.1.2. Turn on printer, if attached and needed.
  - 6.1.3. Open Excel file "CADAP.xls" when using plant inputs, if not opened. This program autoexecutes when Windows starts.

**NOTE**

*If an error message appears stating "Unable to connect to DDE data link", the network is not providing the required information to the program. In this case the program should be ran using the DDE data link choice "None."*

- 6.1.4. Launch CADAP program and select the appropriate source for input:
  - 1. Plant – real time data from the plant.
  - 2. Simulator –to run drill scenarios from the simulator.
  - 3. None (default setting) – a stand-alone mode with no data inputs. The user has to enter all values.
- 6.1.5. Select the desired menu:
  - 1. Projections – selected for dose projections when effluent data is available from plant instrumentation, PI-Server, DRMS, plant chemistry sample, or field monitoring team data. Go to section 6.2.

2. Contingencies – selected to do “what if” calculations for containment venting, containment failure or fuel handling accident. For example: “What would be the offsite dose consequences if containment failed?” Go to section 6.6.
3. Overhead – displays a site map and will show the release rates at each of the three monitored release points. Go to section 6.7.
4. Values – displays plant data retrieved by the network server (Plant or Simulator) and updated every five seconds to allow the user to directly monitor plant parameters. Go to section 6.8.
5. Deposition – provides capability to project whole body external gamma doses at particular locations within the 50-mile EPZ during the first and second years and over the 50-year period after the incident. This information is useful for the recovery phase. Go to section 6.9.
6. Utilities - Go to section 6.10
7. Help

**NOTE**

*Use the mouse or TAB key to move among input fields on the screen. Use of the ENTER key may cause the calculation to be performed before all data is verified or entered.*

- 6.2 Projections - Select appropriate menu item.

**NOTE**

*If the release point effluent monitors are not functional or release is unmonitored, go to section 6.4 if sample data is available or to section 6.5 if field monitoring team data is available. Non-functional monitors may be indicated by no data appearing in the data boxes or by data value of zero.*

**NOTE**

*The "Abort Dose Calculations" button can be used to abort any calculation.*

- 6.3 Select "Monitors" if the calculation is based on plant effluent data.

- 6.3.1. Select "Yes" or "No" as applicable to the questions in the message box:
1. Has Drywell or Containment H<sub>2</sub> been above 1%? A "Yes" selection will select the Fuel Melt core state for all dose projection calculations. This question will not always appear prior to each subsequent calculation.
  2. Do you wish to keep the current settings? A "Yes" selection will keep the previous source term reduction factors and "No" will use default settings.
- 6.3.2. Select appropriate monitor(s). If releases are occurring from more than one release point, select all the appropriate monitors.
- 6.3.3. Verify or enter meteorological data, as applicable. Attachment 1 provides additional guidance.
- 6.3.4. The default Release Duration is 2 hours. If better information is available, enter the revised release duration in hours.
- 6.3.5. Verify or select the appropriate Core State.
1. Attachment 6 provides guidance on determining core state. Additional information for determining core state may be obtained from other ERO positions.

**NOTE**

*Every effort should be made to determine accurate information for the Source Term Reduction values since significant over conservatism from use of the default values could result in the unnecessary evacuation of the 10-mile EPZ.*

**CAUTION**

**A filter train may be operating and the release may not be filtered, i.e. release through the steam tunnel or the filter train is damaged. Verify the release path and then determine if it is a filtered release.**

- 6.3.6. Verify or select the appropriate Source Term Reduction factors. Attachment 1 provides additional guidance.
- 6.3.7. Verify or enter the Time After Shutdown value in hours.

- 6.3.8. Perform dose calculation (Attachment 3).
- 6.3.9. If desired, print the dose projection sheet. Normally 2 copies are printed to provide a copy to the Operations Shift Manager (OSM), Radiation Protection Coordinator (RPC) or Radiological Assessment Coordinator (RAC) as appropriate.
- 6.3.10. If desired, click on the "ESP" button to save the data for use in ESP\_COMM message.
  - 1. A file containing the calculated values will be written to the "C" drive that is available for direct access by the ESP computer to be used on the notification message form (NMF). This file, "dose", also contains a calculation of the noble gas and iodine release rates for inclusion on the NMF. This file may be viewed using any text editor (i.e., Notepad or Word) (See Attachment 2).
  - 2. Select "Yes" to overwrite existing file, if appropriate.
- 6.4 Select "Sample" to calculate offsite doses when a chemistry sample isotopic analysis of the stack effluent is available.
  - 6.4.1. Enter the vent flow rate in cubic feet per minute (cfm).
  - 6.4.2. Verify or enter the Time after Shutdown in hours.
  - 6.4.3. Verify or enter the meteorological data as applicable. Attachment 1 provides additional guidance.
  - 6.4.4. The default Release Duration is 2 hours. If better information is available, enter the revised release duration in hours.
  - 6.4.5. Enter the concentration in  $\mu\text{Ci}/\text{cc}$  for each known nuclide. Use the Tab key or mouse to move between fields.
  - 6.4.6. Perform dose calculation (Attachment 3).
  - 6.4.7. If desired, print the dose projection sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.
  - 6.4.8. If desired, click on the "ESP" button to save the data for use in ESP\_COMM message.

- 6.5 Select "FMT" to calculate doses using field monitoring team data.

**CAUTION**

*Field monitoring teams are rarely able to find the plume centerline doses with accuracy. This option should not be used if other options are available (monitors or sample analysis).*

- 6.5.1. Enter gamma (closed window) dose rate value in mR/hr.
- 6.5.2. Enter downwind distance value in miles where the dose rate was obtained.
- 6.5.3. Verify or enter meteorological data as applicable. Attachment 1 provides additional guidance.
- 6.5.4. The default Release Duration is 2 hours. If better information is available, enter the revised release duration in hours.
- 6.5.5. Verify or select the appropriate Core State. Attachment 6 provides additional guidance.
- 6.5.6. Select the appropriate Source Term Reduction factors. Attachment 1 provides additional guidance.

**CAUTION**

**A filter train may be operating and the release may not be filtered, i.e. release through the steam tunnel or the filter train is damaged. Verify the release path and then determine if it is a filtered release.**

- 6.5.7. Verify or enter the Time After Shutdown value in hours.
- 6.5.8. Perform dose calculation (Attachment 3).
- 6.5.9. If desired, print the dose projection sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.
- 6.5.10. If desired, click the "ESP" button to save the data for use in ESP\_COMM message.

6.6 Contingencies may be used in the absence of effluent radiation monitoring system or post accident sample data or to perform “what if” projections to speculate about possible future conditions. It is only a mathematical calculation based upon a conservative model of River Bend plant accident conditions.

6.6.1. Select Contingencies:

1. Containment Venting - This option should be used when the Containment is intentionally depressurized through the Standby Gas Treatment System or for what if calculations prior to actually venting Containment.
2. Containment Loss – This option is used when there is an accident that causes an unisolated, unmonitored release from Containment, such as a penetration failure to atmosphere.
3. Fuel Handling - This option is used for an accident involving a dropped fuel bundle either in Containment or in the Fuel Building.

6.6.2. Containment Venting Contingency - Select Containment Venting.

1. Select “Yes” or “No” as applicable to the question “Has Drywell or Containment H<sub>2</sub> been above 1%?”
2. Verify or enter the Containment PAM reading in R/hr.
3. Verify or enter meteorological data as applicable. Attachment 1 provides additional guidance.
4. Enter the estimated Release Duration (duration of venting). The default value of 2 hours should **NOT** be used. The value will normally be  $\leq 0.25$  hours, if venting to maintain pressure within a pressure band.
5. Verify or select the appropriate Core State. Attachment 6 provides guidance on determining core state.
6. Verify or select the appropriate Source Term Reduction factors. Attachment 1 provides additional guidance.
7. Verify or enter the Time After Shutdown in hours.
8. Perform dose calculation (Attachment 3).

9. If desired, print the dose projection sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.

**NOTE**

*If performing "what if" calculations prior to actually venting Containment, skip the next step 10.*

10. If desired, click on the "ESP" button to save the data for use in ESP\_COMM message.

**6.6.3. Containment Loss Contingency – Select Containment Loss.**

1. Select "Yes" or "No" as applicable to the question "Has Drywell or Containment H<sub>2</sub> been above 1%?"
2. Verify or enter the Containment PAM reading in R/hr.
3. Verify or enter meteorological data as applicable. Attachment 1 provides additional guidance.
4. Verify or enter Release Duration. PRA data indicates for the most probable containment failure mode, the containment will depressurize from 33 psig to 0 psig in about 7 hours. If better data is available, enter the expected release duration.
5. Verify or select the appropriate Core State. Attachment 6 provides guidance on determining core state.
6. Verify or select the appropriate Source Term Reduction factors. Attachment 1 provides additional guidance.
7. Verify or enter the Time After Shutdown in hours.
8. Perform dose calculation (Attachment 3).
9. If desired, print the dose projection sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.

**NOTE**

*If performing "what if" calculations, skip the next step 10.*

10. If desired, select the "ESP" button to save the data for use in ESP\_COMM message.

6.6.4. Fuel Handling – Select Fuel Handling.

1. Select the location of the fuel handling accident.

**NOTE**

*If the accident involves fuel from the spent fuel pool that was removed from the reactor in a previous refueling, obtain the "Time Since Bundle Last at Power" from Reactor Engineering.*

2. Enter the number of days since reactor shutdown in the Time Since Bundle Last at Power field.
3. Verify or enter meteorological data as applicable. Attachment 1 provides additional guidance.
4. Select the appropriate filtration status, if any. Additional guidance is provided in Attachment 1.
5. Perform dose calculation (Attachment 3).
6. If desired, print the dose projection sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.

**NOTE**

*If performing "what if" calculations, skip the next step 7.*

7. If desired, click on the "ESP" button to save the data for use in ESP\_COMM message.

- 6.7 Overhead – This selection has a site map that will show the release rates at each of the three monitored release points. The release rates are automatically updated every five seconds. This function only works when data is being provided from the network server.

- 6.7.1. If desired, print the output sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.
- 6.8 Values – This displays live plant parameter data and allows direct monitoring by the user. The values are automatically updated every five seconds. This function only works when data is being provided from the network server.
- 6.8.1. If desired, print the output sheet. Normally 2 copies are printed to provide a copy to the OSM, RPC or RAC as appropriate.
- 6.9 Deposition – This selection displays a sub-menu that allows two options:
- 6.9.1. Sample – Enter deposition exposure values from the environmental sample data in the Deposition Exposure Calculation.
1. Enter the isotopic values from the environmental sample for the applicable isotopes.
  2. Enter Time After Shutdown in hours.
  3. Enter the location in miles from plant where the sample was taken.
  4. Select “Yes” or “No” as applicable to add the sample to the average. If “Yes” is chosen, CADAP stores this data in the average file and uses this spectrum to calculate the dose rate based on first year, second year, and fifty year doses. If the average spectrum is available, CADAP uses that data to calculate the doses.
  5. Perform dose calculation to display whole body gamma dose in mRem for the first year, second year, and fifty years.
- 6.9.2. Dose Rate – Similar to the Sample Deposition Calculation but assumes no actual sample data and uses a default spectrum.
1. Position the mouse pointer over the location on the 50-mile Emergency Planning map from which the dose rate data was taken.
  2. Enter the “Dose rate” at the location in mRem/hr.

3. Enter Time After Shutdown in hours.
4. Select Do Conversion button. The first year, second year, and fifty year doses will be displayed in mRem.
5. After the calculation is performed, the location pointed to by the mouse will be displayed as a number representing the sequential sample's number since the dose file was last zeroed.
6. The number on the map will be color coded according to the severity of the dose projections.
  - 1) A red number (danger) denotes a projected dose greater than 2000 mRem for the first year, or greater than 500 mRem for the second year or greater than 5000 mRem for fifty years.
  - 2) A yellow number (warning).
  - 3) A green number (safe) denotes an acceptable projected dose.
7. A display of the sequential number with date and time of the conversion is located in the lower right screen.

6.10 Utilities - This option contains many useful features.

6.10.1. Calculator - This option is a simple calculator.

6.10.2. Conversions - This feature allows the user to perform unit conversions: Length, Area, Volume, Flow, Speed, Pressure, Temperature, Dose, Equivalent Dose and Activity

6.10.3. Trends - This will trend main stack release rate and containment PAM readings from the network server.

6.10.4. Iodine Cartridge - This option allows the analysis of a field monitoring team air sample. The team will provide gross sample results from the field. The CADAP user will enter the appropriate information in the fields to calculate a thyroid dose rate.

### NOTE

*This method provides TEDE estimates, however, estimates can only be based on the last calculation or the last effluent sample calculation which limits this options usefulness, since these calculations are based on a specific time after shutdown. To provide greater flexibility, a set of curves has been provided in Attachment 7 for manually determining exposure to TEDE conversion factors at any time after reactor shutdown.*

6.10.5. DRD to TEDE - This option calculates the TEDE from a self-reading dosimeter value.

1. Select either last calculation or last sample and click.

### NOTE

*While a "default" selection is available, the default value has been set to "1". Do not use this selection.*

2. Click the "Calculate Conversion Factor" button and the conversion factor will appear in the box.
3. Multiply the dosimeter reading in "R" by the conversion factor to obtain the rem TEDE.

## 7 DOCUMENTATION

None.

**CADAP DOSE CALCULATIONS**

Each dose projection screen used in CADAP is self-explanatory. This attachment provides additional guidance for entering data and selecting the appropriate conditions. The actions described herein are for the most probable conditions and actions to be taken. When actual conditions differ from those described, the dose assessment team should make best judgement decisions for data entry and screen selection choices using input from appropriate emergency response personnel such as operations, engineering and technical personnel.

**A. Meteorological Data**

Condition	Action	Entry or Selection
Correct readings	None	None
Incorrect reading(s)	Obtain reading 1. RM-21 terminal (TSC & EOF) 2. AMI-80 computers (MCR, Envir. & Met Tower) 3. National Weather Service (last choice) (Attachment 4)	Enter reading(s)

**B. Release Duration**

Condition	Action	Entry or Selection
2 hours (default)	If a better value is known, use that value.  Note: For Containment Loss Contingency, the most probable PRA failure mode will result in containment depressurization from 33 to 0 psig in 7 hours.  Note: Containment venting duration, should normally be $\leq 0.25$ hours if maintaining in a pressure band.	Enter appropriate value

**C. Core State**

Condition	Action	Entry or Selection
Correct selection	Verify with Attachment 6	Select correct core state
Incorrect selection	Determine state with Attachment 6	Select correct core state

**D. Source Term Reduction Factors (RF)**

Source Term Reduction Factors (RF) are applied to particulates and iodines only since noble gases are not reduced by filtration. All radionuclides are decay corrected based on time after shutdown. Reduction Factors are multiplied together and are limited to  $>0.001$ . If no Reduction Factors are chosen, then a RF of 0.4 is used for system plateout.

CADAP DOSE CALCULATIONS

E. Suppression Pool Scrubbing

Condition	Action/Condition	Entry or Selection	RF
Fuel handling accident	Submersed, water <212°F	Supp Pool <212°F	0.01
	Submersed, water ≥212°F	Supp Pool ≥212°F	0.05
	NOT submersed	None	1
Drywell Bypass leakage (above suppression pool level)	Obtain from Operations personnel in facility (DW#~RB# with major leak in DW) (top of DW vent holes 13 feet)	None	1
Drywell pressure vented to containment via suppression pool	Suppression pool <212°F	Supp Pool <212°F	0.01
	Suppression pool ≥212°F	Supp Pool ≥212°F	0.05
SRV discharge into suppression pool	Suppression pool level above 13 feet and <212°F	Supp Pool <212°F	0.01
	Suppression pool level above 13 feet and ≥212°F	Supp Pool ≥212°F	0.05
SRV discharge above pool level	Suppression pool level below 13 feet	None	1
More than one of the conditions listed above	Normally, the most conservative source term reduction method for the existing conditions is used	Most Conservative existing condition (Normally) [Order: None, ≥212°F, <212°F]	1, 0.05 or 0.01

F. Holdup

Condition	Action/Condition	Entry or Selection	RF
Activity is held up (decay & surface plateout) in containment prior to release to environment	<0.5 hours	<0.5 hrs holdup	1
	0.5-24 hours	0.5-24 hrs holdup	0.04
	>24 hours	>24 hrs holdup	0.01
Activity released from the core is held up (decay & surface plateout) in a compartment other than containment	Normally <0.5 is assumed. RPA, OSM or RPC must justify using any other holdup period.	Select <0.5 hrs holdup (Normally)	1

CADAP DOSE CALCULATIONS

G. Filtration

Condition	Action/Condition	Entry or Selection	RF
An unfiltered release path exists	Verify unfiltered	Do <b>NOT</b> select Filtration	1
SBGTS, FB and/or RW filter train running	Running, filters NOT damaged/loaded and no unfiltered release path	Select SBGTS, FB and/or RW as applicable	0.01
	Running but an unfiltered release path exists	<b>NOT</b> Selected as applicable	1
	Filters damaged/loaded (known or suspected)	<b>NOT</b> selected as applicable	1

H. Time After Shutdown

Condition	Action	Entry or Selection
Release from reactor	If time is not entered from the server or is incorrect, determine time of shutdown. The reactor is considered shutdown when <2% power.	Enter time as necessary and/or set correct shutdown time in CADAP
Release from fuel handling accident	Determine last shutdown time for the fuel bundle(s).	Enter time

Dose Projection Screens - specific information.

I. Monitors Screen

Field	Action	Entry or Selection
Monitors	Determine release monitor(s)	Select all that apply
Monitor Reading(s)	Verify or obtain correct reading(s) (DRMS, computer, RM-23 (MCR))	Verify or enter correct reading(s)

J. Field Monitoring Team Screen

Field	Action	Entry or Selection
Gamma Dose Rate	Enter the gamma dose rate (closed window reading) in mr/hr	Enter dose rate in mr/hr
Downwind Distance	Enter the downwind distance in miles corresponding to dose rate reading	Enter distance in miles
Source Term Reduction	Normally the same variables chosen for Monitors at time of release	Select Appropriate choices

CADAP DOSE CALCULATIONS

**K. Sample Screen**

Field	Action	Entry or Selection
Vent Flow Rate	Determine ventilation flow rate at sample point (DRMS, MCR)	Enter flow rate in CFM
Nuclides	Determine concentration of each nuclide present. Leave zeroes for unknown nuclides. Use Tab key to move between fields.	Enter concentration of each known listed nuclide in $\mu\text{Ci/cc}$

**L. Containment Venting Contingency Screen**

Field	Action	Entry or Selection
Containment PAM Reading	Determine containment PAM reading (DRMS, ERIS, RM-23 (MCR))	Enter reading in R/hr
Release Duration	Determine expected venting duration. Should normally be $\leq 0.25$ hours if maintaining in a pressure band.	Enter duration in hours

**M. Containment Loss Contingency Screen**

Field	Action	Entry or Selection
Containment PAM Reading	Determine containment PAM reading (DRMS, ERIS, RM-23 (MCR))	Enter reading in R/hr
Release Duration	Determine expected duration of release. The most probable PRA failure mode will result in containment depressurization from 33 to 0 psig in 7 hours.	Enter duration in hours
Filtration	Containment failure will not normally be filtered by SBGTS	SBGTS <b>NOT</b> selected (Normally)

**N. Fuel Handling Contingency Screen**

Field	Action	Entry or Selection
Calculation Based On	Determine location: RB or FB	Select location
Time Since Bundle Last at Power	Determine time since last shutdown for affected bundle(s). Last refueling shutdown for recent bundle(s) or contact Reactor Engineering.	Enter time in days
SBGTS or FHB Filter Status	Running, filters <b>NOT</b> damaged/loaded and no unfiltered release path	Select On
	Running but an unfiltered release path exists or filters damaged/loaded	Select Off

## CADAP DOSE CALCULATIONS

**O. CADAP Auto Selection Parameters, Values and Results**

For CADAP to auto select any dose calculation parameter, Main Plant Exhaust release rate must be  $>10 \mu\text{Ci/s}$ . CADAP never assumes the core state repairs itself during any event. The software will **NOT** automatically change Clad Damage back to No Damage and Fuel Melt never changes back to Clad Damage.

Time After Shutdown (TAS) is calculated when Reactor power is  $<2\%$ . If the reactor is shutdown ( $<2\%$ ) when CADAP is opened, the shutdown time starts at the time the software is opened. In this case, adjust the shutdown time using the Utilities menu. In the event power is cycling above and below  $2\%$ , discuss appropriate shutdown time with Operations personnel in the facility.

**Core State**

Parameter	Value	CADAP Auto Selects
Containment PAM (1 or 2)	$>360 \text{ R/Hr}$	Clad Damage
Containment PAM (1 or 2)	$>3600 \text{ R/Hr}$	Fuel Melt
Drywell PAM (1 or 2)	$>1800 \text{ R/Hr}$	Clad Damage
Drywell PAM (1 or 2)	$>18,000 \text{ R/hr}$	Fuel Melt
Reactor at Power with Auto Scram Signal	$\geq 2\%$	Clad Damage (Assumes ATWS)
Reactor Level	$<-162$	Clad Damage
Reactor Level	$<-212$ for $>30$ minutes	Fuel Melt
Area Monitor 140 or 141 RB Refuel Floor	$>50 \text{ mr/hr}$	Clad Damage (for fuel handling accident)

**Holdup**

Containment PAMs (Both)	$>10 \text{ R/Hr}$ for $\geq 30$ minutes	0.5-24 Hr Holdup
Drywell PAMs (Both)	$>10 \text{ R/Hr}$ for $\geq 30$ minutes	0.5-24 Hr Holdup
Containment PAMs (Both)	$>10 \text{ R/Hr}$ for $>24$ Hours	$>24$ Hr Holdup
Drywell PAMs (Both)	$>10 \text{ R/Hr}$ for $>24$ Hours	$>24$ Hr Holdup

**Suppression Pool**

Containment PAM (1 or 2) & Suppression Pool Temp	$>10 \text{ R/Hr}$ & $<212^\circ\text{F}$	Suppression Pool $<212$
	$>10 \text{ R/Hr}$ & $\geq 212^\circ\text{F}$	Suppression Pool $\geq 212$
Drywell PAM (1 or 2) & Suppression Pool Temp	$>10 \text{ R/Hr}$ & $<212^\circ\text{F}$	Suppression Pool $<212$
	$>10 \text{ R/Hr}$ & $\geq 212^\circ\text{F}$	Suppression Pool $\geq 212$

**Filtration**

Containment PAM (1 or 2)	$>10 \text{ R/hr}$	SBGT Filtration
Drywell PAM (1 or 2)	$>10 \text{ R/hr}$	SBGT Filtration
RW Effluent (4006)	$>1000 \mu\text{Ci/s}$	RW Filtration
FB Effluent (4005)	$>1000 \mu\text{Ci/s}$	FB Filtration

ESP EXPORT FILE

After each calculation using one of the CADAP options, the ESP button can be selected to produce the ESP Export file.

The ESP Export file contains calculated dose data that is available to the ESP computer for inclusion on the notification message form (NMF). Perform the following to view this file:

1. Open file c:\export\dose.out using any text editor such as Notepad or Wordpad. User will need to change file type to All Files in order to see the file.
2. A string of alphanumeric characters separated by spaces appear on the screen without identification as shown below. Each set of characters has been identified as to their source of information. The TEDE and Thyroid doses are in Rem. The noble gas and iodine release rates are in Ci/s. The user may need to scroll the screen to the right to see all of the numbers since the text does not always wrap.

Time	Date	Wind Speed	Wind Direction	Affected Sectors	Wind Stability Class	SB TEDE	2 mile TEDE	5 mile TEDE	10 mile TEDE	SB Thyroid	2 mile Thyroid	5 mile Thyroid	10 mile Thyroid	NGas Release Rate	Iodine Release Rate
08.40	09/02/01	4	270	MNP	D	4.89	0.86	0.19	0.06	72.04	12.78	2.96	0.93	3.45	2.96

CADAP OUTPUT SCREEN (TYPICAL)

**Output**

Calculation Date:  Calculation Time:

**Dose Rate Calculations**

Distance	TEDE Dose (rem)	TEDE Dose Rate (rem/hr)	Thyroid Dose (rem)	Thyroid Dose Rate (rem/hr)	Plume Arrival (hr)
SB	<input type="text" value="0.00"/>				
2 Miles	<input type="text" value="0.00"/>				
5 Miles	<input type="text" value="0.00"/>				
10 Miles	<input type="text" value="0.00"/>				

**Meteorological Data**

Wind Speed:  mph  
 Wind Direction:  Degrees  
 Delta T:  Degrees F  
 Stability Class:

**Protective Action Recommendations:**

None required by Dose Projections  
 Evaluate Plant Conditions for possible Required Actions

**Emergency Classification**

Based on Dose Projections:  
None

**Assumptions**

Monitored Release Calculation  
 No Damage Spectrum Used  
 Release duration = 2.00 hours  
 Time after shutdown = 0.00 hours (Reactor Still at Power)  
 No filtration assumed for stack release  
 System plateout assumed  
 Main stack release rate: 2.96E+001 uCi/s  
 Noble Gas release rate: 2.85E-005 Ci/s  
 Iodine release rate: 1.11E-006 Ci/s

PR0011RM CDR

ALTERNATE METHOD OF DETERMINING STABILITY CLASS

1. Stability Class based on Sigma Theta [standard deviation of wind direction (SWD)]
  - a. Obtain Sigma Theta ( $\sigma\theta$ ) value, indicated as "SWD" (30 ft), from meteorological print out in Control Room, Environmental Lab or the base of meteorological tower.
  - b. Select the stability class from the following table:

<u>SWD (<math>\theta</math>) in degrees(<math>^{\circ}</math>)</u>	<u>SWD (<math>\sigma\theta</math>) Range</u>	<u>Stability Class</u>	<u>in degrees (<math>^{\circ}</math>)</u>
$\geq 22.5$		A	(SWD $\geq 22.5$ )
$< 22.5$ $\geq 17.5$		B	(SWD 22.4 to 17.5)
$< 17.5$ $\geq 12.5$		C	(SWD 17.4 to 12.5)
$< 12.5$ $\geq 7.5$		D	(SWD 12.4 to 7.5)
$< 7.5$ $\geq 3.8$		E	(SWD 7.4 to 3.8)
$< 3.8$ $\geq 2.1$		F	(SWD 3.7 to 2.1)
$< 2.1$		G	(SWD $< 2.1$ )

2. If no meteorological tower information is available, estimate stability class from current weather conditions as follows:
  - a. Call the National Weather Service (Numbers are in the Emergency Telephone Book) and obtain the following:
    - (1) Wind Direction      \_\_\_\_\_ Degrees (From)
    - (2) Wind Speed            \_\_\_\_\_ MPH
    - (3) Cloud Cover            \_\_\_\_\_ 10ths
    - (4) Cloud Ceiling         \_\_\_\_\_ Feet
    - (5) Front between RBS and Airport?    Yes \_\_ No \_\_ (If Yes go to 'f.)

ALTERNATE METHOD OF DETERMINING STABILITY CLASS

- b. Modify National Weather Service (NWS) Wind Speed in MPH to local RBS meteorology by multiplying by the appropriate correction factor below:

TABLE 2

<u>Month</u>	<u>Airport Wind Speed (MPH)</u>	<u>Correction factor</u>	<u>Local RBS Wind Speed (MPH)</u>
JAN.	_____	x 0.576 =	_____
FEB.	_____	x 0.586 =	_____
MAR.	_____	x 0.557 =	_____
APR.	_____	x 0.476 =	_____
MAY	_____	x 0.446 =	_____
JUNE	_____	x 0.435 =	_____
JULY	_____	x 0.481 =	_____
AUG.	_____	x 0.474 =	_____
SEP.	_____	x 0.467 =	_____
OCT.	_____	x 0.475 =	_____
NOV.	_____	x 0.563 =	_____
DEC.	_____	x 0.554 =	_____

NOTE

*If nighttime, skip Step 'c.' and go directly to Step 'd.'.*

ALTERNATE METHOD OF DETERMINING STABILITY CLASS

- c. Determine the INSOLATION CLASS NUMBER (ICLNo.) from the following table (Table 3)

ICLNo. = \_\_\_\_\_

**TABLE 3**

Insulation Class Number (ICLNo.) for Time of Year and Time of Day

**HOUR OF DAY (24 hour Clock)**

Time of YEAR	00-6	7	8	9	10	11	12	13	14	15	16	17	18-24
Jan 5-Jan 22	1	1	1	2	2	3	3	3	2	2	1	1	1
Jan 23-Feb 6	1	1	2	2	2	3	3	3	2	2	2	1	1
Feb 7-Feb 21	1	1	2	2	3	3	3	3	3	2	2	1	1
Feb 22-Mar 8	1	1	2	2	3	3	3	3	3	2	2	1	1
Mar 9-Mar 23	1	1	2	3	3	3	3	3	3	3	2	1	1
Mar 24-Apr 7	1	2	2	3	3	3	4	3	3	3	2	2	1
Apr 8-Apr 22	1	2	2	3	3	4	4	4	3	3	2	2	1
Apr 23-May 7	1	2	2	3	3	4	4	4	3	3	2	2	1
May 8-May 22	1	2	3	3	4	4	4	4	4	3	3	2	1
May 23-Jun 6	1	2	3	3	4	4	4	4	4	3	3	2	1
Jun 7-Jun 21	1	2	3	3	4	4	4	4	4	3	3	2	1
Jun 22-Jul 6	1	2	3	3	4	4	4	4	4	3	3	2	1
Jul 7-Jul 21	1	2	3	3	4	4	4	4	4	3	3	2	1
Jul 22-Aug 5	1	2	3	3	4	4	4	4	4	3	3	2	1
Aug 6-Aug 20	1	2	2	3	3	4	4	4	3	3	2	2	1
Aug 21-Sep 4	1	2	2	3	3	4	4	4	3	3	2	2	1
Sep 5-Sep 19	1	2	2	3	3	3	4	3	3	3	2	2	1
Sep 20-Oct 4	1	1	2	3	3	3	3	3	3	3	2	1	1
Oct 5-Oct 19	1	1	2	2	3	3	3	3	3	2	2	1	1
Oct 20-Nov 3	1	1	2	2	3	3	3	3	3	2	2	1	1
Nov 4-Nov 18	1	1	1	2	2	3	3	3	2	2	1	1	1
Nov 19-Dec 3	1	1	1	2	2	3	3	3	2	2	1	1	1
Dec 4-Dec 18	1	1	1	2	2	2	3	2	2	2	1	1	1
Dec 19-Jan 4	1	1	1	2	2	2	3	2	2	2	1	1	1

## ALTERNATE METHOD OF DETERMINING STABILITY CLASS

- d. For daytime, determine the Net Radiation Index (NRADI) using the ICLNo determined in 'c.' above, information concerning cloud cover and cloud ceiling from 'a.' above, and Figure 1. For nighttime, cloud cover in tenths is the only parameter needed to determine NRADI from Figure 1. Daytime is defined as 1 hour after sunrise to 1 hour before sunset.

NRADI = \_\_\_\_\_

- e. Determine the Stability Class using the modified wind speed from 'b.' and the NRADI from 'd.' above.

TABLE 4

Modified wind speed in mph from <u>Item b.</u>	<u>NRADI</u>						
	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>-1</u>	<u>-2</u>
*0-1	A	A	B	C	D	F	G
2-3	A	B	B	C	D	F	G
4-5	A	B	C	D	D	E	F
6	B	B	C	D	D	E	F
7	B	B	C	D	D	D	E
8-9	B	C	C	D	D	D	E
10	C	C	D	D	D	D	E
11	C	C	D	D	D	D	D
12	C	D	D	D	D	D	D

Stability Class \_\_\_\_\_

- f. If a front exists between RBS and Baton Rouge Metropolitan Airport, request that the NWS Meteorologist recommend the "best estimate" wind speed and direction to be used for RBS meteorological conditions, and the approximate time that this condition will exist.

\* For wind speed not included in ranges given, round to the nearest whole number.

ALTERNATE METHOD OF DETERMINING STABILITY CLASS

FIGURE 1

NET RADIATION INDEX  
(NRADI)

CLCVR	DAYTIME			NIGHTTIME
	CLOUD CEILING			
	<7000 FT	7000 TO 15000 FT	>15000 FT	
0/10	NRADI = ICLNO			NRADI = -2
1/10				
2/10				
3/10				
4/10				
5/10	NRADI = ICLNO - 2*	NRADI = ICLNO - 1*	NRADI = -1	
6/10				
7/10				
8/10	NRADI = 0			
9/10				
10/10				

\* If less than 1, set NRADI = 1.

DRMS METEOROLOGICAL DATA

Meteorological data is available from the DRMS system by typing "Help Met" and then pressing the return key at the following locations:

TSC  
DRMS/ERIS Computer Room  
EOF

The typical output format is shown below.

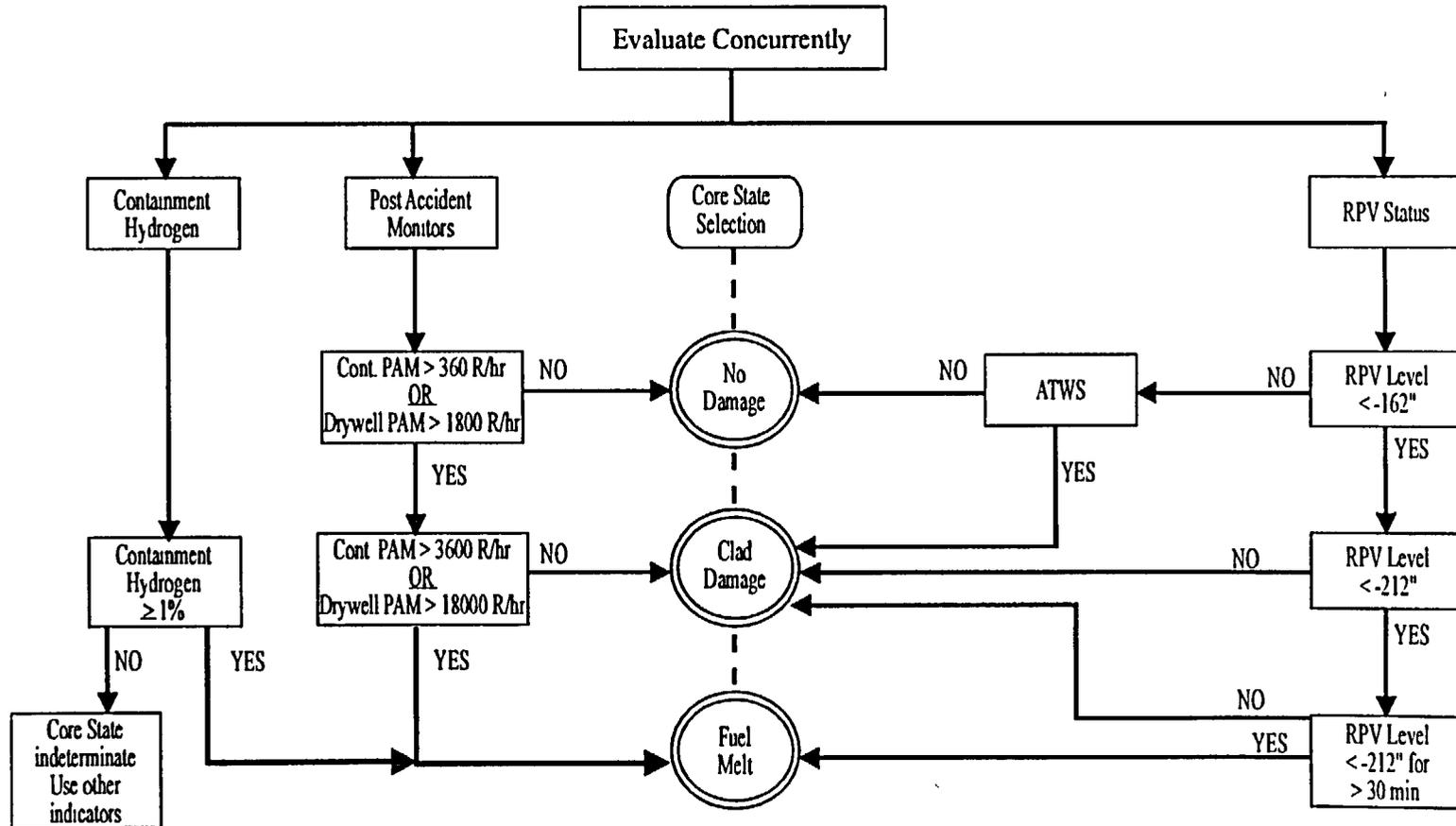
METEOROLOGICAL DATA

RM-21 Date/Time: 5/1/02 13:48: 0	Data Date/Time: 5/1/02 13:40
Primary Sensors -- 45 M Level	Secondary Sensors -- 45 M Level
-----	-----
Wind Speed 6.1 Mph	Wind Speed 6.0 Mph
Wind Direction 321.0 Deg A	Wind Direction 317.6 Deg A
Dewpoint 0.0 * Deg F	
Primary Sensors -- 10 M Level	Secondary Sensors -- 10 M Level
-----	-----
Wind Speed 4.7 Mph	Wind Speed 4.5 Mph
Wind Direction 325.7 Deg A	Wind Direction 321.5 Deg A
Ambient Temp. 90.5 Deg F	Ambient Temp. 91.2 Deg F
Dewpoint 0.0 * Deg F	
Precipitation 0.00 Inch	
Primary Sensors -- 45 M - 10 M	Secondary Sensors -- 45 M - 10 M
-----	-----
Delta Temperature -1.197 Deg F	Delta-Temperature -2.135 Deg F
Stability Class B	Stability Class A

\*Indicates data is questionable or bad.

# PROCEDURE AID

This information was intended for verification of CADAP "Core State" ONLY! It is not to be used for any other purpose  
 "Core State" is the "TRIGGER" mechanism which provides CADAP with the assumed isotopic mixture in order  
 to calculate offsite TEDE.

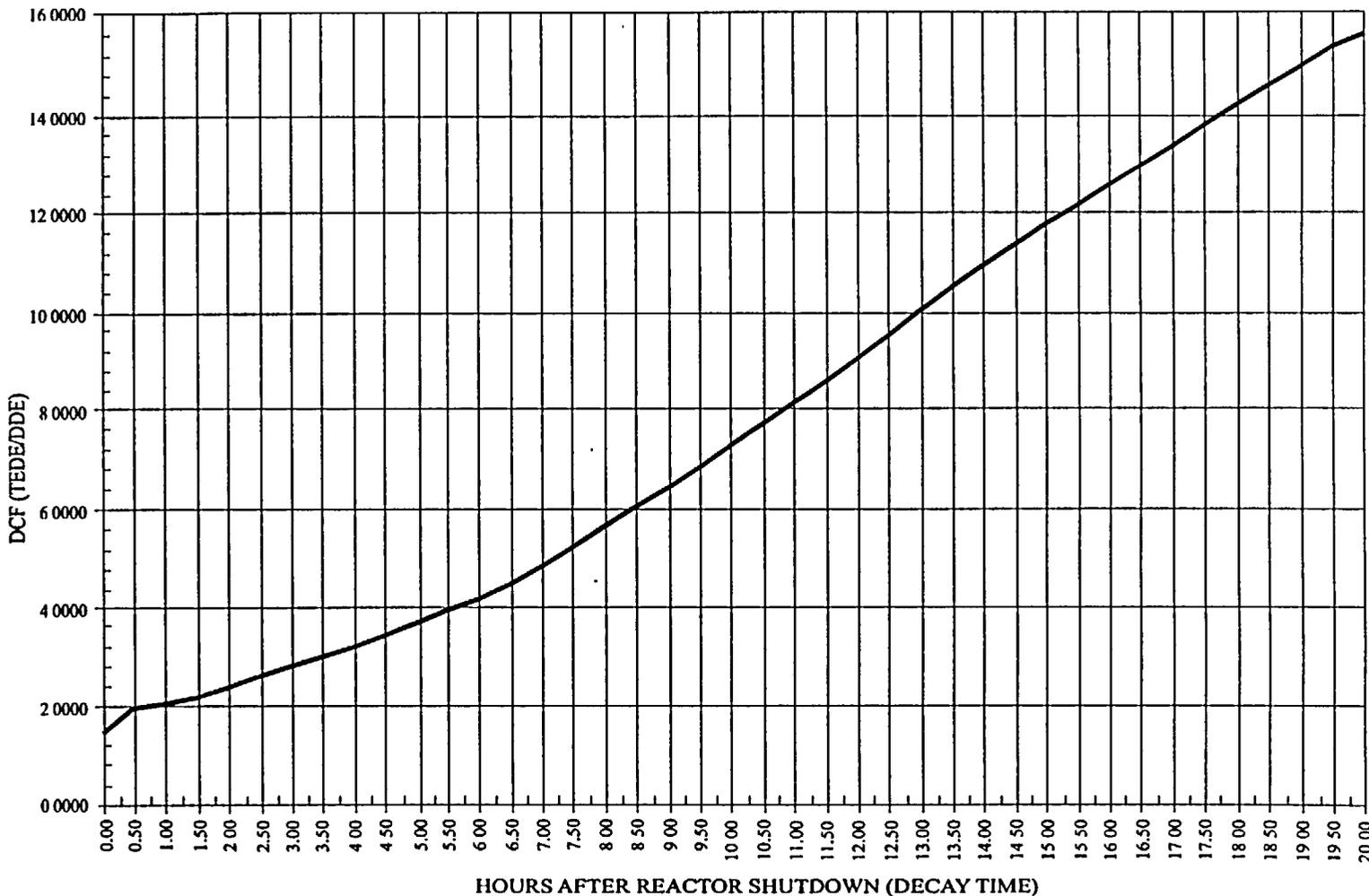


ds00008m cdr

Approved: \_\_\_\_\_  
KCN      Date

**PROCEDURE AID**

**TEDE/DDE DCF FOR UNFILTERED RELEASE**



KYS0016M CDR

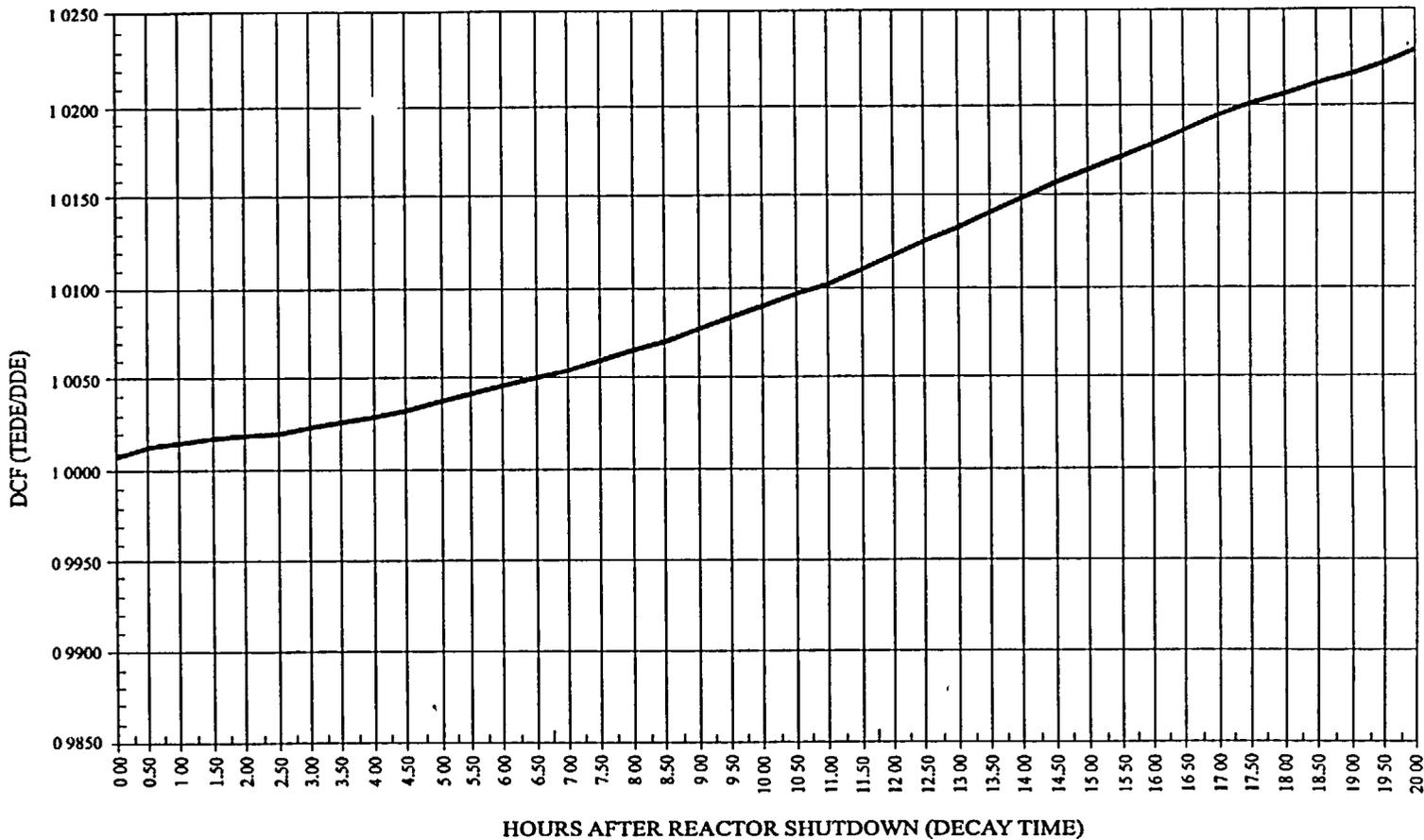
Approved: \_\_\_\_\_  
KCN      Date

DOSIMETER READINGS TO TEDE CONVERSION

ATTACHMENT 7  
PAGE 1 OF 2

**PROCEDURE AID**

**TEDE/DDE DCF FOR FILTERED RELEASE**



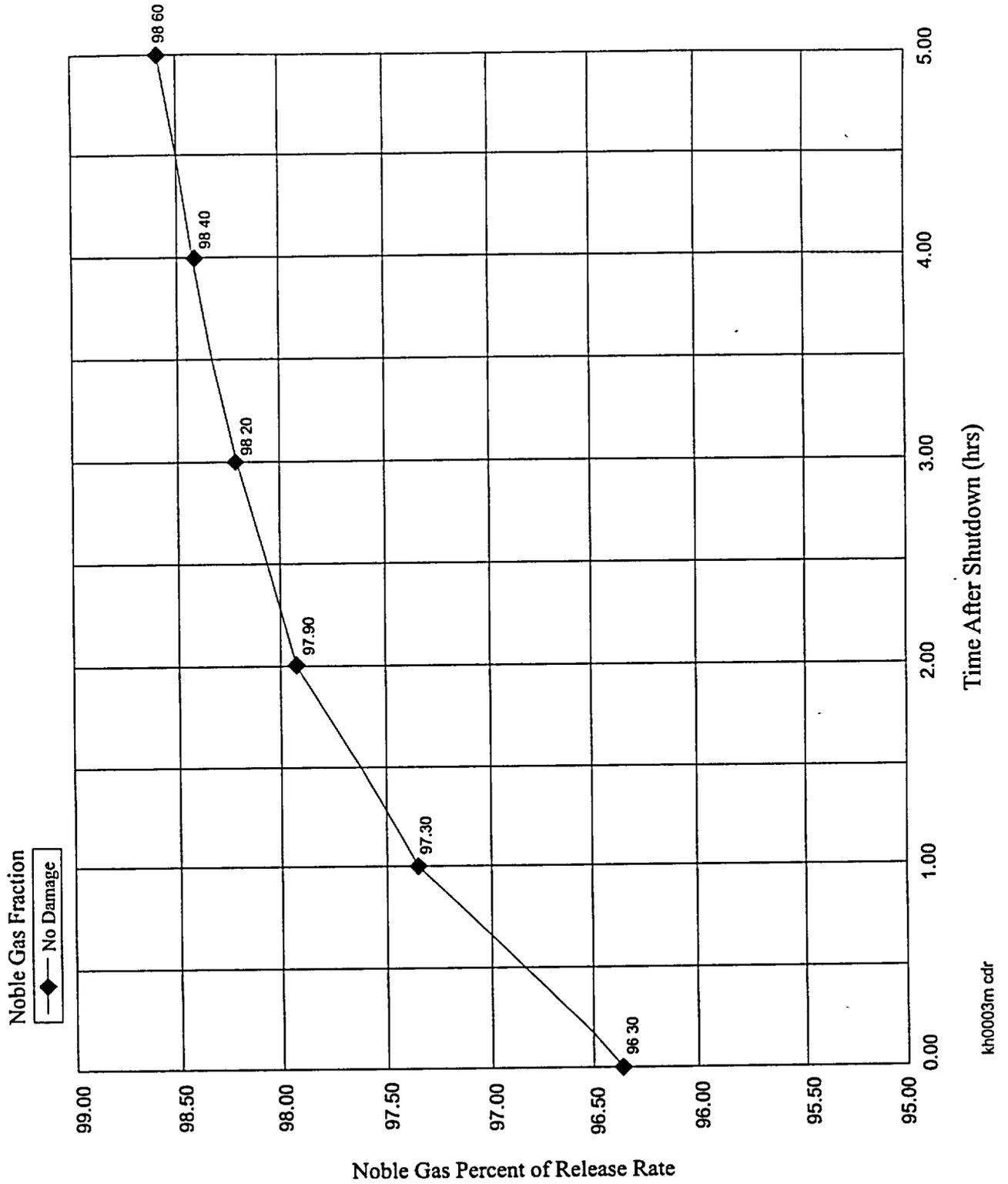
KYS0017M CDR

Approved: \_\_\_\_\_  
KCN Date

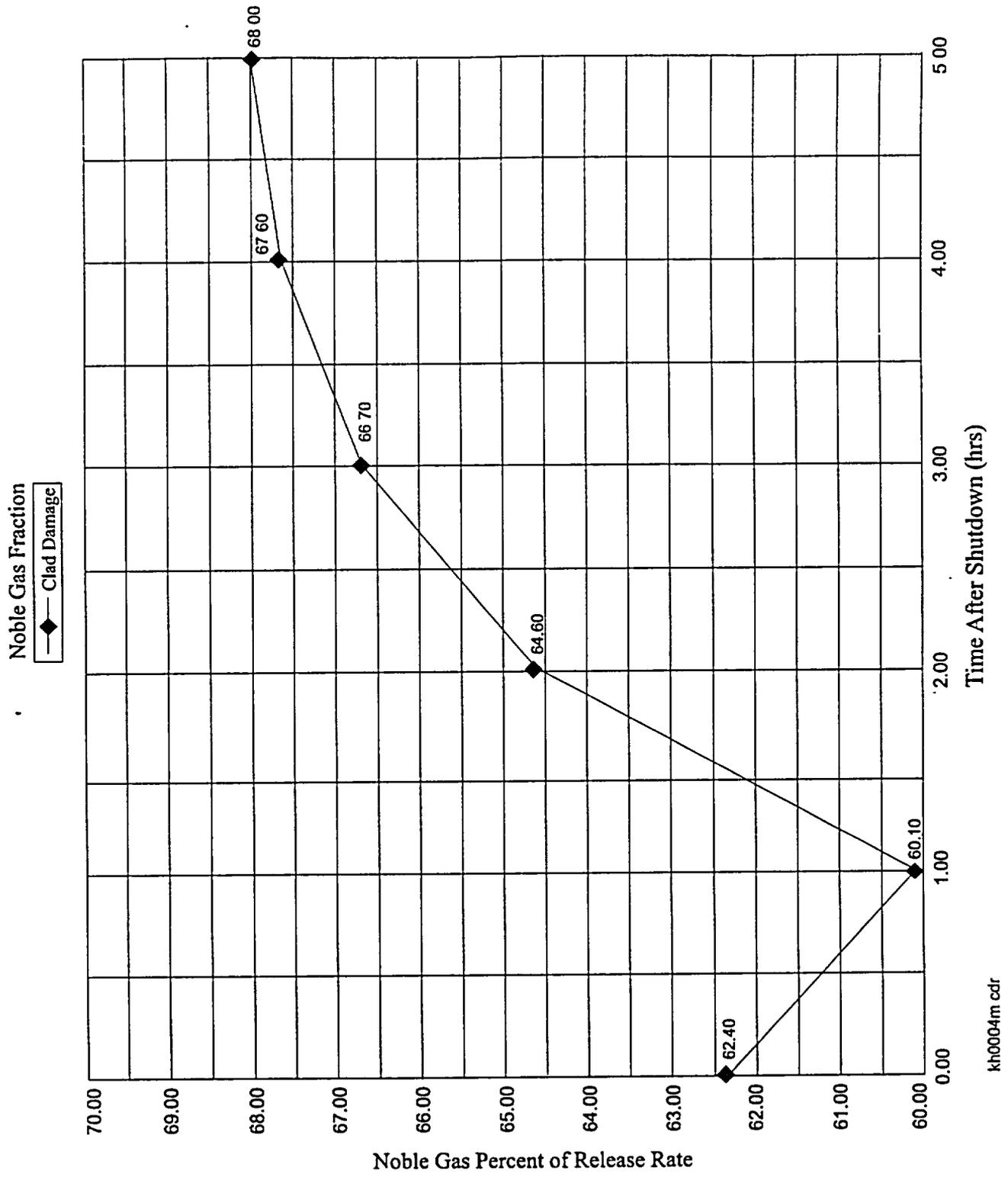
**NOBLE GAS AND IODINE RELEASE RATE DETERMINATION**

1. Read the release rate in  $\mu\text{Ci}/\text{sec}$  from the appropriate DRMS channel (4125, 4005 or 4006)
2. Convert release rate in step 1 above to  $\text{Ci}/\text{sec}$  by dividing the release rate in  $\mu\text{Ci}/\text{sec}$  by  $1\text{E}6$ .
3. From pages 2, 3, and 4 of this Attachment, depending on core state (See Attachment 6) find the Noble Gas Fraction for the desired time after reactor shutdown.
4. Multiply the  $\text{Ci}/\text{sec}$  from step 2 above by the Noble Gas Fraction determined in step 3 above. This result is the Noble Gas release rate in  $\text{Ci}/\text{sec}$  to be entered on the Notification Message Form.
5. Subtract the Noble Gas release rate determined in step 4 above from the total release rate in  $\text{Ci}/\text{sec}$  determined in step 2 above. The result is the Iodine release rate in  $\text{Ci}/\text{sec}$  to be entered on the Notification Message Form. Note that this value will also include any particulates being released. There are no provisions for separating Iodines and particulates in this method.

### NOBLE GAS AND IODINE RELEASE RATE DETERMINATION



### NOBLE GAS AND IODINE RELEASE RATE DETERMINATION



kh0004m cdr

### NOBLE GAS AND IODINE RELEASE RATE DETERMINATION

