



ROCHESTER GAS AND ELECTRIC

A black and white line drawing of the Ginna nuclear power station, showing its distinctive containment domes and industrial buildings.

1987
GINNA STATION
PLUME EXPOSURE
AND
INGESTION PATHWAY
EXERCISE
WEEK OF OCTOBER 25

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PART I
GENERAL INFORMATION

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THE ROCHESTER GAS AND ELECTRIC CORPORATION
GINNA STATION
EMERGENCY PREPAREDNESS EXERCISE MANUAL
1987 PLUME EXPOSURE EMERGENCY PREPAREDNESS EXERCISE
AND
ADDENDUM FOR NEW YORK STATE INGESTION PATHWAY EXERCISE

OCTOBER 1987

Prepared by:
Rochester Gas and Electric Corporation

CONTROLLED COPY NO. _____



ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

1987 PLUME EXPOSURE EMERGENCY PREPAREDNESS EXERCISE

AND

ADDENDUM FOR THE NEW YORK STATE INGESTION PATHWAY EXERCISE

FOREWORD

This exercise package has been developed to provide the basis for the conduct of a simulated radiological accident at the Ginna Station located in Ontario, New York. Through this exercise, the capabilities and effectiveness of the Emergency Response Plans for The Rochester Gas and Electric Corporation, the State of New York, and Monroe and Wayne Counties will be evaluated. This package is to be utilized by the Exercise controllers and observers to initiate, control and evaluate the activities of the participants in the exercise.

The Rochester Gas and Electric Corporation and the State of New York approve this document as the standard for conduct in performance of the October 1987, unannounced, off-hours Plume Exposure Emergency Preparedness Exercise, and also the Addendum which will be used to conduct the subsequent New York State Ingestion Pathway Exercise.

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THE ROCHESTER GAS AND ELECTRIC CORPORATION, GINNA STATION

1987 PLUME EXPOSURE EMERGENCY PREPAREDNESS EXERCISE AND THE

NEW YORK STATE INGESTION PATHWAY EXERCISE

INTRODUCTION

PLUME EXPOSURE EXERCISE

The Nuclear Emergency Response Plan (NERP) describes the emergency response capabilities for a nuclear emergency at the Ginna Station, including support from Federal, State, and local government agencies and private organizations. The Nuclear Emergency Response Plan provides for continuous emergency preparedness, including an annual exercise.

The purpose of the Plume Exposure Emergency Preparedness Exercise is to activate and evaluate major portions of the emergency response capabilities and other aspects of the Emergency Plan and associated Emergency Plan Implementing Procedures, in accordance with Nuclear Regulatory Commission (NRC) Regulation 10CFR50.47(b) and Appendix E. This Exercise will be with the participation of State of New York, and the Counties of Wayne and Monroe in order to assess State and Local Government Agency Emergency Response. The conduct and evaluation of the Exercise provide additional training for the Plume Exposure Pathway emergency response organization personnel and a means to further enhance Rochester Gas and Electric Corporation's emergency response capability.

INGESTION PATHWAY EXERCISE

The New York State Ingestion Pathway Emergency Response Plan describes the emergency response capabilities and responsibilities for a radiological emergency affecting the State, including support from Federal, State, and local government agencies and private organizations. The State Ingestion Pathway Emergency Response Plan provides for continuous emergency preparedness, including a Federally-evaluated exercise to be conducted at a minimum 6-year frequency.

The purpose of the Exercise is to activate and evaluate major portions of the emergency response capabilities and other aspects of the New York State Ingestion Pathway Emergency Response Plan and associated Implementing Procedures, in accordance with Nuclear Regulatory Commission (NRC) Regulation - 10CFR50.47(b) and Appendix E, NUREG-0654 and Federal Emergency Management Agency (FEMA) Draft Guidance Memorandum IN-1. This exercise will be with the participation of State of New York, selected counties within a 50-mile radius of the R.E. Ginna Nuclear Power Plant, the Department of Energy and the Rochester Gas and Electric Corporation in order to assess overall State emergency capabilities in response to a postulated event affecting the Ingestion Pathway.



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This Exercise Manual has been developed to provide the basis for the conduct of a simulated radiological accident at the Ginna Station facility located in Ontario, New York. This manual is to be utilized by the exercise controllers to initiate, control, and evaluate the activities of the participants in the exercise. Exercise "players" will not have prior knowledge of the nature of the simulated incident or any parts thereof such as radiological plume release information, including times, content, size and weather pattern used.

This Exercise Manual is the control mechanism for the conduct of the Exercise and consists of two parts. Part I provides a general description and overview of the emergency exercise. Part II contains the scenario and time schedule of simulated plant conditions. The Addendum will contain information for the subsequent New York State Ingestion Pathway Exercise. The Exercise Manual is subject to a limited, controlled distribution.

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1987 PLUME EXPOSURE EMERGENCY PREPAREDNESS EXERCISE

AND

INGESTION PATHWAY EXERCISE

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GINNA STATION
1987 PLUME EXPOSURE EMERGENCY PREPAREDNESS EXERCISE

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SECTION 1.0
SCOPE AND OBJECTIVES



1.0 SCOPE AND ON-SITE OBJECTIVES - PLUME EXPOSURE PATHWAY

1.1 Scope

The 1987 Full Scale Emergency Preparedness Plume Exposure Pathway Exercise, to be conducted in October during off hours and unannounced, will simulate accident events culminating in a radiological accident with resultant off-site releases from the Ginna Station (GS), located in Ontario, Wayne County, New York. The Exercise will involve events that test the effectiveness of the Ginna Station Emergency Preparedness Program and the integrated capabilities of the emergency organizations of the State of New York, and the Counties of Wayne and Monroe. The Exercise will include the limited mobilization of state and local resources adequate to verify their capability to respond to an accident.

In addition to evaluating on-site activities, the U.S. Nuclear Regulatory Commission will participate in the Exercise co-locating personnel in the various licensee Emergency Response Facilities. The Federal Emergency Management Agency will evaluate off-site activities.

The exercise objectives are provided as separate sections, divided into the objectives for the Plant (Section 1.2) and those of each state/local agency (Section 1.3). A summary of proposed activities is delineated in Section 1.4, following the attachments.

1.2 Preliminary On-Site Objectives for the 1987 Ginna Evaluated Plume Exposure Pathway Exercise

The major objective of the exercise is to demonstrate the response capabilities of the Rochester Gas and Electric Emergency Response Organization. Within this overall objective, numerous individual objectives are specified as follows:

- 1.2.1 Demonstrate the ability to mobilize, staff and activate Emergency Response Facilities promptly.
- 1.2.2 Demonstrate the ability to fully staff facilities and to maintain staffing on an around-the-clock basis through the use of relief shift rosters (limited shift changes may occur to allow for operational restrictions).
- 1.2.3 Demonstrate the ability to make decisions and to coordinate emergency activities.

- 1.2.4 Demonstrate the adequacy of facilities and displays and the utilization of procedures to support emergency operations.
- 1.2.5 Demonstrate the ability to communicate with all appropriate locations, organizations, and field personnel.
- 1.2.6 Demonstrate the ability to mobilize and deploy Radiation Survey Teams.
- 1.2.7 Demonstrate the appropriate equipment and procedures for determining ambient radiation levels.
- 1.2.8 Demonstrate the appropriate equipment and procedures for measurement of airborne radioiodine concentrations as low as 1.0 E-7 uCi/cc in the presence of noble gases.
- 1.2.9 Demonstrate the appropriate equipment and procedures for the collection of environmental samples.
- 1.2.10 Demonstrate the ability to project dosage to the public via plume exposure, based on plant and field data, and to determine appropriate protective measures, based on Protective Action Guidelines, available shelter, evacuation time estimates, expected release duration, and other appropriate factors.
- 1.2.11 Demonstrate the ability to notify off-site officials and agencies within 15 minutes of declaration of an emergency.
- 1.2.12 Demonstrate the ability to periodically update off-site officials and agencies of the status of the emergency based on data available at GS.
- 1.2.13 Demonstrate the ability to notify emergency support pools as appropriate (i.e., INPO, ANI, etc.).
- 1.2.14 Demonstrate the ability to notify on-site personnel using plant alarms and public address systems.
- 1.2.15 Demonstrate the ability to effectively assess incident conditions and to properly classify the incident.
- 1.2.16 Demonstrate the organizational ability and resources necessary to manage an accountability of personnel within the protected area.
- 1.2.17 Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of protected area personnel.



- 1.2.18 Demonstrate the organizational ability and resources necessary to control access to the site.
- 1.2.19 Demonstrate the ability to continuously monitor and control emergency workers' exposure.
- 1.2.20 Demonstrate the adequacy of facilities and displays to support the Joint Emergency News Center Operations.
- 1.2.21 Demonstrate the ability to brief the media in a clear, accurate, and timely manner.
- 1.2.22 Demonstrate the ability to provide advance coordination of information released to the public.
- 1.2.23 Demonstrate the ability to establish and operate rumor control in a coordinated fashion.
- 1.2.24 Demonstrate the adequacy of in-plant post-accident sampling techniques and analysis.
- 1.2.25 Demonstrate the ability to develop proposed short term and long term actions to support plant recovery.
- 1.2.26 Demonstrate the adequacy of Fire-Fighting practices and procedures.
- 1.2.27 Demonstrate the adequacy of corrective measures taken to remedy the areas identified for improvement at the conclusion of previous exercise (Inspection No.50-244/-86-13).

1.3 Summary of Proposed Activities

Table 1.1 provides a list of proposed RG&E activities and simulations.



TABLE 1.1

1987 GINNA STATION EMERGENCY PREPAREDNESS EXERCISE
(PLUME EXPOSURE)
PROPOSED ONSITE ACTIVITIES

	<u>RG&E</u>
Notification of Agencies	Actual
Call up of Personnel	Actual
Activate Organization	Actual
Maintain Security	Actual
Conduct Dose Assessment	Actual
PAG Recommendation	Actual
Operate Joint News Center	Actual
EPZ Siren Activation	N/A
Route Alerting	N/A
EBS Message Broadcast	N/A
Dispatch Field Survey Teams	Actual-5
Exchange of Field Data	Actual
Reception Center Setup	N/A
Congregate Care Center	N/A
School Bus Run	N/A
General Population	N/A
Traffic Control Points	N/A
Road Impediments	N/A
Coast Guard (notify only)	N/A
Mobility Impaired	N/A

TABLE 1.1 (Cont'd)

Simulations

- o Respiratory protection and protective clothing will be simulated by onsite/offsite survey teams. Inplant teams will don such protection at the Controller's discretion.
- o Call out of offsite fire companies will be simulated.
- o Acceleragraph film retrieved^Δ and development will be simulated. Notification of offsite film processor will be made.

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2.0 SCOPE AND ON-SITE OBJECTIVES - INGESTION PATHWAY

- 2.1 In addition to the Plume Exposure Pathway Exercise, an Ingestion Pathway Exercise will be conducted during normal working hours on the second day following the Plume Exposure Pathway Exercise.

New York State Radiological Emergency Preparedness Group will have the lead in coordinating the activation of local, State, and Federal agencies as appropriate to demonstrate the effectiveness of the New York State Emergency Preparedness Program.

All such activities will be evaluated by the Federal Emergency Management Agency.

2.2 Preliminary On-Site Objectives (EOF)

- 2.2.1 Demonstrate ability to deploy and coordinate environmental sampling teams (0-10 miles), Teams will be simulated.
- 2.2.2 Demonstrate ability to evaluate laboratory data and/or field measurements and provide appropriate PAR'S and interface to New York State.
- 2.2.3 Provide interface with New York State Post-Accident Assessment and in Public Information functions as needed.

3.0 OFFSITE OBJECTIVES AND PROPOSED ACTIVITIES

- 3.1 The off-site agencies' objectives and Proposed Activities are found as follows:

<u>Agency</u>	<u>Attachment</u>
State of New York	A
Monroe County	A
Wayne County	A

The off-site exercise objectives are written in reference to the FEMA Example Exercise Objectives.

3.2

Summary of Proposed Activities

Attachment A also lists a summary of proposed activities for the 1987 Ginna Emergency Preparedness Exercise. The listing describes, by organization, if an activity is to actually be accomplished or is to be simulated. A blank space denotes that the activity does not apply that particular agency.

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ATTACHMENT A

STATE OF NEW YORK

MONROE COUNTY AND WAYNE COUNTY

FINAL OBJECTIVES

OCTOBER, 1987



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PROPOSED EXERCISE OBJECTIVES FOR
THE 1987 GINNA EXERCISE
Rev. 8/26/87

New York State

State Emergency Operations Center (SEOC)

- SEOC -1 Demonstrate the ability to communicate with all
(CO -5) appropriate locations, organizations, and field
 support.

Guidelines: State, counties and the utility should establish appropriate communication links. Systems include RECS line, executive hot-line and commercial lines, RACES, radios and telefax. The RECS line will be used as the primary system to receive information from the licensee. Also, the ability to receive and verify the initial and follow-up emergency notification from the licensee will be observed. (No simulated failures are to be evaluated. Back-up systems are to be used in the event of actual failure of the primary systems.

- SEOC -2 Demonstrate the ability to mobilize staff and activate
(CO -1) the State EOC in a timely manner.

Guidelines: Proper use of call-up procedures, and timely arrival of staff and setting up of EOC.

- SEOC -3 Demonstrate the adequacy of facilities and displays to
(CO -4) support emergency operations.

Guidelines: Ensure measures are in place to control access to EOC areas; identification badges are verified; ingress and egress logs are maintained. Messages are transmitted in an accurate and timely manner, messages are to be properly logged, status boards are accurately maintained and updated, appropriate briefings are held and incoming personnel are briefed. Sufficient equipment (e.g., furniture, space, lighting, telephones and status boards) should be available.

SEOC -4 Demonstrate the ability to make decisions and to
(CO -3) coordinate emergency activities.

Guidelines: Individual acting in command & control for decision making must be clearly in charge, taking into account all critical parameter (e.g., evacuation time estimates, available resources, met data, etc.).

SEOC -5 Demonstrate the ability to fully staff facilities and
(CO -2) maintain staffing around the clock.

Guidelines: An actual shift change involving all key staff must be observed. The shift change must show 24 hour coverage. Agencies that have demonstrated 24 hour coverage in previous exercises will be given credit for meeting this objective.

SEOC -6 Demonstrate the ability to identify the need for,
(CO -32) request and obtain Federal assistance.

Guidelines: This issue will be evaluated as a command and control function. The decision maker will be asked about the circumstance under which he would request Federal assistance.

SEOC -7 Demonstrate the ability to project dosage to the public
(CO -10) via the plume exposure, based on plant and field data, and to determine appropriate protective actions based on PAG's, available shelter, evacuation time estimates, and all other appropriate factors.

Guidelines: Dose assessment and accident evaluation personnel will provide recommendations to the decision maker based upon utility recommendations, independent recommendations from accident assessment group and off-site factors. Command and control will make decision based on inputs from the various sources. all factors will be carefully analyzed before a decision is made.

SEOC -8 Demonstrate the ability to provide advance
(CO -25) coordination of information released.

Guidelines: Coordinate among NYS and 2 counties for the decision to simulate the activation of the sirens and the subsequent activation of the EBS.

SEOC -9 Demonstrate the ability to supply and administer KI, if
(CO -22) the decision has been made to do so.

Guidelines: The decision making process for KI will discussed after the release occurs. In the event the scenario does not yield a significant iodine release that warrants KI usage, emergency workers should know who will direct them to take KI.

SEOC Demonstrate the ability to make decisions and to
ING -1 coordinate emergency activities within the ingestion
(CO -3) pathway exposure emergency planning zone.

Guidelines: Command and control decisions based on inputs from various sources. all factors will be carefully analyzed before a decision is made.

SEOC Demonstrate the ability to communicate with all
ING -2 appropriate locations, organizations, and field
(CO -5) personnel; special emphasis will be on communications between field monitoring and sampling teams and their control points.

Guidelines: Communications include radio, telefax and commercial lines.

SEOC Demonstrate the ability to project dosage to the
ING -3 public via ingestion pathway exposure, based on utility
(CO -11) and field data and to determine appropriate protective actions, based on the PAG's and other relevant factors

Guidelines: Dose assessment and accident evaluation personnel will provide these recommendations to decision makers

SEOC Demonstrate the ability to implement preventive and
ING -4 emergency protective actions for the ingestion
(CO -12) exposure pathway hazards.

Guidelines: Command and Control will analyze situation including staff input and issue a decision to the respective agencies for implementation.



SEOC
ING -5
(CO-6)

Demonstrate the ability to mobilize and deploy sample collection teams in an timely fashion.

Guidelines: 5 State ingestion team members will be notified during the inhalation portion of the exercise and then pre-positioned at one of the appropriate SEMO district office at the beginning of the ingestion phase. Equipment checkout, team briefings and the current status and dispatching to field monitoring sample points will be conducted.

The 5 teams will actually be deployed in the 50 mile EPZ. Dose assessment will be done solely with State input. Other State agency teams may simulate activity. Brookhaven National Laboratory/DOE will assist per the Federal Monitoring and Assessment Plan.

SEOC
ING -6

Demonstrate appropriate equipment and procedures for laboratory measurement and analysis of appropriate radioisotope deposition in food and environmental samples.

Guidelines: Selected field samples will be delivered to the DOH labs, Albany. The lab techniques will not be evaluated. Data for the samples will be provided by a controller to the appropriate exercise participants. Upon arrival at the lab, sorting, diluting and labeling of samples, procedures for preventing laboratory contamination and cross contamination and some sample preparation will be evaluated. Laboratory analytical capabilities will be documented by the NRC and provided to FEMA.

SEOC
ING-7
(CO-34)

Demonstrate the ability to estimate total population exposure.

Guidelines: The methodology and consultative processes used to determine total population exposure will be evaluated. Actual calculations for determining population exposures will not be evaluated.

SEOC
ING-8
JNC-1
(CO-14)

Demonstrate the ability to formulate and distribute appropriate instructions to the public in a timely manner.

Guideline: The only portion of information that will be operational will be the State function responsible for the distribution of information to the public. This objective will be demonstrated out of the SEOC for the purpose of this exercise. No rumor control, media response nor issuance of EBS will be evaluated, however, the capability for these will be observed.

Western District Emergency Operating Center (WDEOC)

WDEOC-1 Demonstrate the ability to mobilize staff and activate
(CO-1) the WDEOC in a timely manner.

Guideline: Proper use of the call-up procedures and timely arrival of staff and setting-up of EOC.

WDEOC-2 Demonstrate the adequacy of facilities and displays
(CO -4) to support emergency operations.

Guidelines: Ensure measures are in place to control access to EOC areas; identification badges are verified; ingress and egress logs are maintained. Messages are transmitted in an accurate and timely manner, messages are properly logged, status boards are accurately maintained and updated, appropriate briefings are held and incoming personnel are briefed. Sufficient equipment (e.g., furniture, space, lighting, telephones and status boards) should be available.

WDEOC-3 Demonstrate the ability to make decisions and to
(CO-3) coordinate emergency activities.

Guideline: Individual acting in & control for assisting in implementing State EOC activities must be in charge.

WDEOC-4 Demonstrate the ability to communicate with all
(CO-5) appropriate locations, organizations, and field personnel.

Guideline: Communications include RECS line, and commercial lines. (Note: No simulated failures are to be evaluated. Back-up systems are to be used in the event actual failure of the primary system).

WDEOC-5 Demonstrate the ability to fully staff facilities
(CO-2) and maintain staffing around the clock.

Guideline: Same as SEOC-5, (CO-2).

Lake District Emergency Operating Center LDEOC

LDEOC-1 Demonstrate the ability to mobilize staff and activate
(CO-1) the LDEOC in a timely manner.

Guideline: Proper use of the call-up procedures and
 timely arrival of staff and setting-up of
 EOC.

LDEOC-2 Demonstrate the adequacy of facilities and displays
(CO-4) to support emergency operations..

Guidelines: Ensure measures are in place to control
 access to EOC areas; identification badges are
 verified; ingress and egress logs are maintained.
 Messages are transmitted in an accurate and timely
 manner, messages are properly logged, status boards are
 accurately maintained and updated, appropriate
 briefings are held and incoming personnel are briefed.
 Sufficient equipment (e.g., furniture, space, lighting,
 telephones and status boards) should be available.

LDEOC-3 Demonstrate the ability to make decisions and to
(CO-3) coordinate emergency activities.

Guideline: See WDEOC-3, (CO-4).

LDEOC-4 Demonstrate the ability to communicate with all
(CO-5) appropriate locations, organizations, and field
 personnel.

Guideline: Communications include RECS line, executive
 command line, and commercial lines. (Note:
 No simulated failures are to be evaluated.
 Back-up systems are to be used in the event
 of actual failure of primary systems). If
 appropriate, capability for receiving field
 measurement data from sampling teams will be
 evaluated.

LDEOC
ING-2 Demonstrate the ability to communicate with all
(CO-5) appropriate locations, organizations and field
 personnel.

Guideline: Communication with field sampling team
 will be by use of radio.



LDEOC-5 Demonstrate the ability to mobilize and deploy sample
ING -5 collection teams in a timely fashion.
(CO -6)

Guidelines: 5 State ingestion team members will be notified and pre-positioned at the district office. Equipment checkout, team briefing and the current status and dispatching to field monitoring sample points will be conducted.

LDEOC-6 Demonstrate the ability to fully staff facilities
(CO-2) and maintain staffing around the clock.

Guideline: Same as SEOC -5, (CO-2)

LDFA-1 Demonstrate appropriate equipment including personal
(CO-9) dosimetry and procedures for the collection and
ING transport of samples of soils, vegetation, snow, water
and milk.

Guideline: Selected samples will be delivered to DOH lab, Albany, from the area of potential impact. protective clothing will not be worn for the duration of the ingestion pathway exercise. supplies of protective clothing, including hand and foot covering can be worn for evaluation, then removed.

Emergency Operating Facility (EOF)

EOF-1 Demonstrate the ability to mobilize staff and activate
(CO-1) State functions at the EOF in a timely manner.

Guideline: The State representative will not be pre-positioned. State representative will demonstrate an appropriate arrival time, at the Alert ECL. Local State EOF representative will activate in accordance with procedures.

EOF-2 Demonstrate the ability to communicate with all
(CO-5) appropriate locations, organizations, and field personnel.

Guideline: Communications include RECS line, RACES, radios, telefax, and commercial lines. (Note: No simulated failures are to be evaluated. Back-up systems are to be used in the event of actual failure of the primary systems). Commercial telephone lines will be the primary system

EOF-3 Demonstrate the adequacy of facilities and displays to
(CO-4) support emergency operations

Guidelines: Same as SEOC -3, (CO-4).

EOF-4 Demonstrate the ability to fully staff facilities and
(CO-2) and maintain staffing around the clock.

Guideline: 24 hour capability will be shown by
roster.

Monroe County

Emergency Operating Center (EOC)

MEOC-1 Demonstrate the ability to communicate with all
(CO_5) appropriate locations, organizations, and field
personnel.

Guidelines: Communications include RECS line,
executive command line, Races, radios, telefax and
commercial lines. The RECS line will be used to receive
information from the licensee. The commercial
telephone will be used as a backup. The County will
also communicate with the U.S. Coast Guard and the
Ontario-Midland Railroad. (Note: no simulated failures
are to be evaluated).

MEOC-2 Demonstrate the ability to mobilize staff and activate
(CO-1) facilities promptly.

Guidelines: Proper use of call-up procedures, and
timely arrival of staff and setting up of the EOC.
Albany based staff will arrive at the Alert ECL.

MEOC-3 Demonstrate the adequacy of facilities and displays to
(CO-4) support emergency operations

Guidelines: Ensure measures are in place to control
access to EOC areas; identification badges are
verified; ingress and egress logs are maintained.
Messages are transmitted in an accurate and timely
manner, messages are properly logged, status boards are
accurately maintained and updated, appropriate
briefings are held and incoming personnel are briefed.
Sufficient equipment (e.g., furniture, space, lighting,
telephones and status boards) should be available.

MEOC-4 Demonstrate the ability to make decisions and to
(CO-3) coordinate emergency activities.



Guidelines: Individual acting in command and control for decision making must be clearly in charge taking into account all critical parameters (e.g., evacuation time estimates, available resources, met data, etc.).

MEOC-5
(CO-2)

Demonstrate the ability to fully staff the facility and maintain staffing around the clock.

Guideline: 24 hour capability can be shown by roster

MEOC-6
(CO-10)

Demonstrate the ability to project radiation dosage to the public via plume exposure, based on plant data and field data, and to determine appropriate protective measures, based on PAGs available shelter, evacuation time estimates, and other appropriate factors.

Guideline: Dose assessment and accident evaluation personnel will provide these recommendations to decision makers.

MEOC-7
(CO-13)

Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an instructional message, within 15 minutes.

Guidelines: Coordination of public alerting and the prompt alert notification system with Wayne County and New York State. The EBS will be activated and each County will simulate activation of the sirens.

MEOC-8
(CO-15)

Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the 10 mile EPZ.

Guideline: Command and Control will analyze the situation including staff input and issue a decision to the respective agencies for implementation.

MEOC-9
(CO-16)

Demonstrate the organizational ability to deal with impediments to evacuation, such as inclement weather or traffic obstruction. Resources will actually be deployed.

Guideline: Command and Control will analyze situation including staff input and issue a decision to the respective agencies for implementation.

MEOC-10
(CO-17)

Demonstrate the organizational ability necessary to control access to an evacuated area.

Guideline: No resources will be deployed.



MEOC-11 Demonstrate the ability to identify the need for,
(CO-32) request and obtain State assistance(if warranted).

Guideline: This ability will be demonstrated if the County should determine that this action is necessary.

FIELD ACTIVITY

MCFA-1 Demonstrate the ability to continuously monitor and
(CO-20) control emergency worker exposure

Guidelines: Emergency workers should have high range and low range dosimeters, TLD's, know reporting exposure limits to supervisors and the proper use of dosimeters. Emergency workers are knowledgeable on procedures and systems for obtaining permission to exceed limits as defined by respective county plans. This guideline will also include State emergency workers.

MCFA-2 Demonstrate the ability to mobilize and deploy field
(CO-6) monitoring teams in a timely manner.

Guideline: Proper use of the call out system, equipment checkout, team briefing on current status and dispatching to radiological field monitoring sample points.

MCFA-3 Demonstrate appropriate equipment and procedures for
(CO-7) determining ambient radiation levels.

Guidelines: Teams members shall set-up and operate the instruments correctly including recording of data and reporting of data to the EOC.

MCFA-4 Demonstrate appropriate equipment and procedures for
(CO-8) measurement of airborne radioiodine concentrations as low as 10^{-7} uCi/CC in the presence of noble gas.

Guidelines: Teams shall set-up equipment and collect an air sample, read the sample and record the data, and transmit the data to the EOC.

MCFA-5 Demonstrate the ability to provide backup public
(CO-13) alerting procedures, If necessary, in the event of partial siren system failure.

Guidelines: This activity is to simulated. The police will be notified but not deployed. Discussion will take place at the EOC

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MCFA-6 Demonstrate that information on emergency actions has
(CO-14) been provided to permanent and transient
population within the 10 mile EPZ.

Guidelines: Brochure distribution documentation from
NYS to FEMA will meet this objective. Additionally,
the annual certification will serve to verify that
information has been distributed.

MCFA-7 Demonstrate the organizational ability and resources
(CO-17) necessary to establish a traffic control point.

Guidelines: Traffic control point will be set up and
observed.

MCFA-8 Demonstrate the ability to supply and administer KI,
(CO-21) if the decision has been made to do so.

Guidelines: The decision making process for KI usage
will be discussed after the release occurs. Emergency
workers should know who will direct them to take KI.

MCFA-9 Demonstrate the organizational ability and resources
(CO-15) necessary to manage an orderly evacuation of all or
part of the plume EPZ.

Guidelines: Messages will be inserted at the County
EOC to the Command and Control. Information will be
passed to the appropriate agency for action and
dispatching of one (1) bus run.

MCFA-10 Demonstrate a sample of resources necessary to deal
(CO-16) with impediments to evacuation, as inclement weather
or traffic obstruction.

Guidelines: Appropriate resources are dispatched to
scene.

MCFA-11 Demonstrate the adequacy of procedures for registration
(CO-27) and radiological monitoring of evacuees over a 24 hour
period.

Guidelines: Within a twelve (12) hour period, there
should be enough personnel and equipment capable of
monitoring all residents and transients in the plume
exposure EPZ arriving at the reception center. A
center not utilized in previous exercises should be
used for this exercise. This will be set up out of
sequence with the exercise.



MCFA-12 Demonstrate the adequacy of facilities for mass care of
(CO-28) evacuees.

Guidelines: At least three ARC staff will arrive and function as shelter managers, registrar and staff members. Once the ARC is told how many people to expect, they should have access to personnel to cover the initial 24 hour operation, explain support agreement and have floor plans for set up of the center. This will be set up out of sequence with the exercise.

MCFA-13 Demonstrate adequate procedure and equipment for disposal of contaminated waste (e.g., clothing).

MCFA-14 Demonstrate the organizational ability and resources
(CO-19) necessary to effect an orderly evacuation of schools within the plume EPZ.

Observer will go to the bus garage, contact dispatcher, ride bus (van) to the school and then to school reception center. Bus drivers knowledge of dosimetry will be observed.

Wayne County

Emergency Operating Center (EOC)

WEOC-1 Demonstrate the ability to communicate with all
(CO-5) appropriate locations, organizations, and field personnel.

Guidelines: See MEOC-1, (CO-5)

WEOC-2 Demonstrate the ability to mobilize staff and activate
(CO-1) facilities promptly.

Guidelines: See MEOC-2, (CO-1)

WEOC-3 Demonstrate the adequacy of facilities and displays to
(CO-4) support emergency operations.

Guidelines: See MEOC-3, (CO-4)

WEOC-4 Demonstrate the ability to make decisions and to
(CO-3) coordinate emergency activities.

Guidelines: See MEOC-4, (CO-3)

WEOC-5 Demonstrate the ability to fully staff the facility
(CO-2) and maintain staffing around the clock.

Guideline: See MEOC-5, (CO-2)



WEOC-6
(CO-10) Demonstrate the ability to project radiation dosage to the public via the plume exposure, based on plant data and field data, and to determine appropriate protective measures, based on PAGs, available shelter, evacuation time estimates, and other appropriate factors.

Guideline: See MEOC-6, (CO-10)

WEOC-7
(CO-13) Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an instructional message within 15 minutes.

Guideline: Coordination of the public alerting and the prompt alert notification system with Monroe County and New York State. The EBS will be activated and each County will simulate activation of the sirens.

WEOC-8
(CO-15) Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the 10-mile EPZ.

Guideline: See MEOC-8, (CO-15)

WEOC-9
(CO-16) Demonstrate the organizational ability to deal with impediments to evacuation, such as inclement weather or traffic obstruction.

Guideline: This activity will be simulated.

WEOC-10
(CO-17) Demonstrate the organizational ability necessary to control access to an evacuated area.

Guideline: See WEOC-9

WEOC-11
(CO-32) Demonstrate the ability to identify the need for, request and obtain State assistance (if warranted).

Guideline: See MEOC-12, (CO-32)

WEOC-12
(CO-23) Demonstrate the ability to effect an orderly evacuation of onsite personnel.

Guidelines: Coordination with NFO of evacuees, per the plan, is to be observed.

FIELD ACTIVITY

WCFA-1
(CO-20) Demonstrate the ability to continuously monitor and control emergency worker exposure.

Guidelines: See MCFA-1, (CO-20)

WCFA-2 Demonstrate the ability to mobilize and deploy field
(CO-6) monitoring teams in a timely manner.

Guidelines: See MCFA-2, (CO-6)

WCFA-3 Demonstrate appropriate equipment and procedures for
(CO-7) determining ambient radiation levels.

Guidelines: See MCFA-3, (CO-7)

WCFA-4 Demonstrate appropriate equipment and procedures for
(CO-8) measurement of airborne radioiodine concentrations as low as 10-7 uCi/CC in the presence of noble gas.

Guidelines: See MCFA-4, (CO-8)

WCFA-5 Demonstrate the ability to provide backup public
(CO-13) alerting procedures, if necessary, in the event of a partial siren system failure.

Guideline: The route alert drivers, members of the Ontario Fire Department, will be interviewed at their point of deployment about route alerting procedures. Updated maps will be observed, adequacy of the number of vehicles and also knowledge of KI procedures and exposure control will be ascertained.

WCFA-6 Demonstrate the ability to formulate and distribute
(CO-14) appropriate instructions to the public in a timely fashion.

Guidelines: See MCFA-6, (CO-14)

WCFA-7 Demonstrate the organizational ability and resources
(CO-17) necessary to control access to an evacuated area.

Guidelines: This is to be simulated.

WCFA-8 Demonstrate the ability to supply and administer KI,
(CO-21) if the decision has been made to do so.

Guideline: See MCFA-8, (CO-21)

WCFA-9 Demonstrate the organizational ability and resources
(CO-15) necessary to manage an orderly evacuation of all or part of the plume EPZ.

Guideline: See MCFA-9, (CO-15)

WCFA-10 Demonstrate a sample of resources necessary to deal
(CO-16) with impediments to evacuation, as inclement weather
or traffic obstruction.

Guideline: This activity will be simulated.

WCFA-11 Demonstrate the adequacy of procedures for registration
(CO-27) and radiological monitoring of evacuees over a 24 hour
period.

Guidelines: See MCFA-11, (CO-27)

WCFA-12 Demonstrate the adequacy of facilities for mass care of
(CO-28) evacuees.

Guidelines: See MCFA-12, (CO-12)

WCFA-13 Demonstrate adequate procedure and equipment for
disposal of contaminated waste (e.g., clothing).

WCFA-14 Demonstrate adequate equipment and procedures for
(CO-29) decontamination of emergency workers, equipment
and vehicles.

Guidelines: Procedures for disposal of liquid waste
should be demonstrated.

WCFA-15 Demonstrate the organizational ability and resources
(CO-19) necessary to effect an orderly evacuation of schools
within the plume EPZ.

Guidelines: See MCFA 14

Joint News Center

JNC-1 Demonstrate the ability to mobilize staff and activate
(CO-1) the facility promptly.

Guidelines: The County staff will respond in
accordance with their notification procedures. The
State PIO will demonstrate an appropriate arrival time,
at the Alert ECL.

JNC-2 Demonstrate the ability to brief the media in a clear,
(CO-24) accurate, and timely manner.

Guideline: Assure that all necessary information is
presented to the media in press releases in a timely
manner. All required personnel will be present at the
briefings unless EBS messages or news release
preparation is determined by respective PIO to take
priority.

JNC-3
(CO-5)

Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.

Guidelines: Coordination among personnel to ensure information for release is known to all Counties, State and participating licensee (i.e., "sign off procedures").

JNC-4
(CO-26)

Demonstrate the ability to establish and operate rumor control in a coordinated fashion.

Guideline: The State, Counties, and licensee will respond accurately to incoming calls based on scenario information.

JNC-5
(CO-2)

Demonstrate the ability to fully staff facilities and maintain staffing around the clock.

Guideline: 24 hour staffing is to be provided via shift change. NYS will demonstrate 24 hour coverage via roster.

JNC-6
(CO-4)

Demonstrate the adequacy of facilities and displays to support emergency operations.

Guideline: This activity will be part of the utility's evaluation and will not appear in the off site evaluation

JNC-7
(CO-13)

Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.

Guidelines: The initial simulated alert signal and the (test) instructional message issued via the Emergency Broadcast System must be aired within 15 minutes after the authorized public officials reach a decision which requires activating the alert and notification system. Subsequent messages must be read in 15 minutes after the decision to do so has been made (i.e., this will have been met if the first two words of the message are read into the telephone at the JNC prior to the end of the 15 minutes. (i.e. the first two words have been read into the telephone at the JNC.

JNC-8

Demonstrate the ability to formulate and distribute appropriate instruction to the public in a timely manner.

Guideline: Information and recommendations shall be prepared and provided to the public in a manner consistent with the needs for public response. This may be accomplished through EBS messages, news releases, newspapers, telephone and/or radio and television.

TABLE 1.1

1987 GINNA STATION EMERGENCY PREPAREDNESS EXERCISE
PROPOSED ACTIVITIES

<u>NRC</u>	<u>RG&E</u>	<u>NYS</u>	<u>MONROE COUNTY</u>	<u>WAYNE COUNTY</u>
Notification of Agencies	Actual	Actual	Actual	Actual
Call up of Personnel	Actual	Actual	Actual	Actual
• Activate Organization	Actual	Actual	Actual	Actual
Maintain Security	Actual	Actual	Actual	Actual
Conduct Dose Assessment	Actual	Actual	Actual	Actual
PAG Recommendation	Actual	Actual	Actual	Actual
Operate Joint News Center	Actual	Actual	Actual	Actual
EPZ Siren Activation Simulate**	N/A	Simulate**	Simulate**	
Route Alerting Actual(1)	N/A	N/A	Actual(1)	
EBS Message Broadcast Simulate**	N/A	Simulate**	Simulate**	
Dispatch Field Survey Teams Actual(2)	Actual-S	N/A	Actual(2)	
Exchange of Field Data	Actual	Actual	Actual	Actual
Reception Center Setup Actual(1)*	N/A	N/A	Actual(1)*	
Congregate Care Center Actual(1)*	N/A	N/A	Actual(1)*	
School Bus Run Simulate	N/A	N/A	Simulate	
General Population Actual(1)+	N/A	N/A	Simulate(1)	
Traffic Control Points Simulate	N/A	N/A	Actual(1)	
Road Impediments Simulate	N/A	N/A	Actual(1)	



SECTION 2.0
EXERCISE INFORMATION

2.0 EXERCISE INFORMATION

2.1 Exercise Participants

The participants in the Exercise will include the following:

2.1.1 The Rochester Gas and Electric Corporation

1. Facilities Management and Support Personnel

- a. Control Room
- b. Technical Support Center (TSC)
- c. Operations Support Center (OSC)
- d. Emergency Survey Center
- e. Emergency Operations Facility (EOF)
- f. Joint Emergency News Center (JENC)
- g. Engineering Support Center (ESC)

2. Emergency Response Teams

- a. Radiation Survey Teams (RSTs)
- b. First Aid Team (if necessary)
- c. Emergency OSC Teams
- d. Security Force
- e. Post Accident Sampling System (PASS) Team
- f. Chemistry/Health Physics Support
- g. Fire Brigade (if necessary)

2.1.2 Off-Site Agencies/Organizations

Limited participation of the following Agencies/Organizations is expected:

1. Federal

- a. Nuclear Regulatory Commission (NRC)
- b. United States Coast Guard (USCG)
- c. Federal Emergency Management Agency (FEMA)

2. State

- a. New York State Emergency Management Offices
- b. New York State Radiological Emergency Preparedness Group

3. Local

- a. Wayne County
- b. Monroe County



2.2 Exercise Organization

The organization for this Exercise will consist of the Exercise Coordinator, the Controllers, the Players, and the Observers, as follows:

2.2.1

The Exercise Coordinator will coordinate Exercise preparations including the development of the scenario and controller input messages. He will control all aspects of the conduct of the Exercise, prepare a consolidated evaluation and critique report at the conclusion of the Exercise, and prepare and follow up on an itemized list of corrective actions recommended as a result of the evaluation and critique.

2.2.2

Controllers are qualified personnel selected to perform functions as follows:

1. A Lead Controller is assigned to each emergency response facility. The Lead Controller is responsible for all Controller, Evaluator, and Observer activities for that facility and, if appropriate, its associated teams. Controllers for teams or sub areas of a facility report to the Lead Controller of that facility.
2. The Controllers will deliver "Exercise Messages" to designated players at various times and places during the Exercise, inject or deliver additional messages as may be required to initiate the appropriate player response and keep the Exercise action moving according to the scenario and Exercise objectives, observe the Exercise participants at their assigned locations, and prepare evaluation forms. Controllers/observers submit written recommendations on corrective actions to the Lead Controller, who in turn summarizes all comments for submittal to the Exercise Coordinator prior to the scheduled critique. The Controllers will be provided with a list of instructions in the Exercise Scenario.

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3. Persons designated as Controllers/Observers for a given function will also be assigned as Evaluators of that function when feasible. Evaluators will record their observations using an evaluation form and provide recommendations on corrective actions to the Lead Controller in whose facility they evaluate exercise performance on the basis of standards or requirements contained in the appropriate Emergency Plan, Implementing Procedures, and Exercise messages and as described herein. They will take steps, whenever possible, to collect data on the time and motion aspects of the activity observed for post-Exercise use for implementing improvements.

Controllers will be identified by wearing green arm bands with white lettering stating "Controller."

- 2.2.3 Players include Ginna Station and other Rochester Gas and Electric Corporation personnel assigned to perform emergency functions, as described in the Emergency Plan and Implementing Procedures. Players from off-site organizations and agencies (county, State, and private industry) are participants in the Exercise as described in their respective Emergency Plans and Standard Operating Procedures.

- 2.2.4 Observers from The Rochester Gas and Electric Corporation and other organizations may be assigned to participate in the Exercise solely for the purpose of observing/evaluating Exercise activity. They will be provided with orientation information and appropriate exercise publications.

Observers will be identified by wearing maroon arm bands with white lettering. Federal agency observers will be identified by wearing blue arm bands with white lettering stating "NRC".

Visitors from the Rochester Gas and Electric Corporation and other organizations may be assigned, on a limited basis, for the sole purpose of observing exercise activities for personal education. Visitors will be identified by wearing white arm bands with black lettering stating "Visitor". They will be provided with orientation information and appropriate exercise publications.

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- 2.2.5 Requests to participate as a Visitor should be made in writing and contain the Visitor's full name, home address and phone number, and organizational affiliation. Requests to participate as Visitors must be submitted to the RG&E Corporate Emergency Planner (CEP) no later than one week before the Exercise.

2.3 Emergency Response Facilities

During the Exercise, special facilities must be activated to manage, assess, and support emergency response.

RG&E Facilities

The Rochester Gas and Electric Corporation Emergency Response Facilities are:

1. Control Room

The Ginna Station Control Room will be used. Control Room emergency response measures will be exercised under the direction of the exercise Shift Supervisor, acting as the Emergency Coordinator, until relieved by the Plant Superintendent or alternate. The Control Room is located off the Turbine Building on the Operating floor.

2. Technical Support Center (TSC)

When emergency conditions escalate to an Alert status or higher, coordination of the emergency response will shift from the Control Room to the TSC, located off the mezzanine level of the Turbine Building (see Figure 2.2). The Plant Superintendent relieves the Shift Supervisor as Emergency Coordinator and directs activities from the TSC. The TSC is the location from which technical management personnel utilize information on plant status provided in the TSC to support actions being performed in the Control Room. The TSC serves as the primary communications source to the NRC, OSC, EOF, and off-site agencies, and will perform other functions of the EOF until the EOF is activated.



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3. Operations Support Center (OSC)

The OSC, located in the TSC provides a location where emergency response teams can be assembled and coordinated during an emergency. The OSC will be activated for emergency conditions classified as an Alert or higher, and may be activated for an Unusual Event at the discretion of the Emergency Coordinator.

4. Emergency Operations Facility (EOF)

The EOF, located in the basement of 49 East Avenue in Rochester will be activated for emergency conditions classified as a Site Area Emergency or General Emergency (optional for the Alert status). The EOF/Recovery Manager directs the activities of the EOF/Recovery Organization from the EOF. The Emergency Coordinator reports to the EOF/Recovery Manager. The EOF is the command post for coordination of response measures with off-site organizations, assessment of radiological and environmental conditions and determination of recommended protective actions for the public. The EOF also provides direction and management of recovery operations.

5. Joint Emergency News Center (JENC)

The JENC located at 89 East Avenue in Rochester provides the point of contact for the coordinated release of news and information to the news media and the general public. The JENC is staffed by RG&E Corporation, County, State, and Federal officials and will be activated for emergency conditions classified as a Site Area Emergency or General Emergency (optional for the Alert status).

2.4 Exercise Conduct

2.4.1 Overview

The Exercise will simulate an abnormal radiological incident at the Ginna Station which will start with an Unusual Event and escalate to a General Emergency.

During the course of the Exercise, in order to evaluate coordination with appropriate State and local agencies, incidents will arise which require response by off-site emergency response organizations/ agencies. The Exercise will also simulate an off-site radiological release which will require deployment of Ginna Station, and Wayne and Monroe County radiological survey teams for off-site monitoring.

The conduct of the Exercise will demonstrate the effectiveness of selected organizations, personnel, functions, and/or activities of the appropriate Emergency Plans and Implementing Procedures. The simulated emergency will then de-escalate. The Recovery Phase will be initiated, and the Exercise will then be terminated.

2.4.2 Actions

Emergency response actions during the simulated emergency will include: recognition and classification of emergency conditions; assessment of on-site/off-site radiological consequences; alert/notification and mobilization of emergency response organizations; implementation of in-plant corrective actions, activation/operation of emergency response facilities and equipment; preparation of reports, messages, and record-keeping; and recommendation of protective actions.

2.4.3 Communications

The Exercise will also demonstrate the effective use of communications systems. An actual emergency operation usually requires the extensive use of both telephone and radios. The telephone is the primary means of communication and will be attempted first, with radio as a backup, unless radio is the only means available. Separate telephone numbers will be used for Controller communications to prevent the Players from learning in advance of the situation to which they are to be subjected during the Exercise. Close cooperation and coordination among Controllers is essential due to the number of persons assigned to the Controller role.

2.4.4 Controllers

Lead Controllers will be stationed in the Control Room, OSC, TSC, EOF, JENC, and County EOCs. Only Lead Controllers can modify exercise messages or initiate free play messages.

1. The Control Room will be the central point for organization of exercise messages and is the key to ensuring that the Exercise progresses on schedule. Simulated plant parameters will be provided to the Control Room operators using plant data and status sheets. Since it is necessary that the emergency escalate to the General Emergency level, it may be necessary to postulate non-credible situations. The operators will accept the exercise messages as written. If corrective actions



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are postulated that would terminate the emergency, they should be identified to the Lead Controller, in the affected facility so that the scenario will progress as designed. The Exercise players are expected to "free play" the scenario to the extent practical. Notifications of, and contact with, supervisors, plant management, and off-site agencies will be made in accordance with the Emergency Plan Implementing Procedures.

2. The TSC will be the coordination point for on-site emergency response activities. TSC personnel will also coordinate off-site emergency response activities until activation of the EOF. TSC and EOF personnel will be aware that if the Exercise is to proceed as planned, and if the off-site organizations are to be exercised, it may be necessary to postulate non-credible situations. This is done to ensure that various aspects of the on-site and off-site emergency response organizations are tested. TSC and EOF personnel will accept exercise messages as written. The intended response is not to explain why a situation could not occur, but to react as though it did occur. If corrective actions are postulated that would terminate the emergency, they should be noted to the Lead Controllers.

The Exercise Players in the TSC and EOF are expected to "free play" the scenario to the extent practical. Notifications of, and contact with, supervisors, plant management, and off-site agencies should be made in accordance with the Emergency Plan Implementing Procedures. The Scenario is designed to activate on-site and off-site emergency response capabilities.

The Lead Controllers may inject other information or change a message to ensure that the Exercise progresses as planned.

2.4.5 Players

The success of the Exercise is largely dependent upon player reaction, player knowledge of their appropriate Emergency Plan and Implementing Procedures, and an understanding of the purpose of the Exercise. Initial conditions which will affect player action or reaction will be provided to the players at the time the Exercise begins. However, most of the elements of the Exercise play will be introduced through the use of controlled Exercise message forms and messages generated by Players as a result of the particular emergency.



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activity performed. Players, therefore, are responsible for initiating actions during the Exercise in accordance with instructions, responsibilities, and tasks for their particular function. Each Player will advise his/her Controller prior to performing required emergency actions during the play of simulated activities to ensure that the Player is credited for his/her actions.

Players are reminded not to be excessively concerned with the mechanics or cause of the exercise scenario. This Exercise is designed to evaluate the Emergency Plan, Implementing Procedures, and emergency preparedness training program and not the probability, feasibility, or detailed mechanics of the simulated accident. Additionally, the Exercise is a training vehicle for Rochester Gas and Electric Corporation personnel to practice coordinating with outside organizations in a simulated emergency environment. Players should note any needed improvements that come to their attention during the Exercise and submit them to the appropriate Controller at the conclusion of the Exercise.

2.5

Precautions and Limitations.

This section provides information for all Exercise Controllers and Observers related to the rules and guidelines to be followed throughout the conduct of this Exercise. Prior to initiation of the Exercise, a pre-exercise briefing will be held to review the entire Exercise process with all the Exercise Controllers and Observers identified in this manual.

- A. Should at any time during the course of the conduct of this exercise, an actual emergency situation arise, all activities and communications related to the Exercise will be suspended. It will be the responsibility of any Exercise Controller or Observer that becomes aware of an actual emergency to suspend exercise response in his/her immediate area and to inform the Lead Exercise Controller of the situation. Upon notification of an actual emergency, the Lead Exercise Controller may notify all other Controllers/ Observers to suspend all exercise activities. The Lead Exercise Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the exercise.



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- B. Should, at any time during the course of the conduct of this exercise, an Exercise Controller or Observer witness an exercise participant undertake any action which would, in the opinion of the Controller/Observer, place either an individual or component in an unsafe condition, the Controller/ Observer is responsible for intervening in the individual's actions and terminating the unsafe activity immediately. Upon termination of the activity, the Controller/Observer is responsible for contacting the Lead Exercise Controller and informing them of the situation. The Lead Exercise Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the exercise.
 - C. No pressurization of fire hoses, discharging of fire extinguishers, or initiation of any fire suppression systems will be required for the Exercise.
 - D. Manipulation of any plant operating systems, (except for the PASS system), valves, breakers, or controls in response to this exercise are only to be simulated. There is to be no alteration of any plant operating equipment, systems, or circuits during the response to this exercise.
 - E. All repair activities associated with the scenario will be simulated with extreme caution emphasized around operating equipment.
 - F. All telephone communications, radio transmissions, and public address announcements related to the exercise must begin and end with the statement, "This is an exercise." Should a Controller or Observer witness an exercise participant not observing this practice, it is the Controller's/Observer's responsibility to remind the individual of the need to follow this procedure.
 - G. Any motor vehicle response to this exercise, whether it be ambulance, fire fighting equipment, police/security vehicles or field monitoring teams, should observe all normal motor vehicle operating laws including posted speed limits, stop lights/signs, one way streets, etc.
 - H. Should any on-site security actions be required in response to this exercise participants are to cooperate as directed by the Security Force, and security representatives are to be prudent and tolerant in their actions.



- I. Exercise participants are to inject as much realism into the exercise as is consistent with its safe performance; however, caution must be used to prevent over-reaction.
- J. Care must be taken to assure that any non-participating individuals who may observe exercise activities or overhear exercise communications are not misled into believing that an actual emergency exists. Any Exercise Controller or Observer who is aware of an individual or group of individuals in the immediate vicinity who may have become alarmed or confused about the situation, should approach that individual or group and explain the nature of the exercise and its intent.

2.6 Evaluation and Critique

The Exercise will be evaluated by Controllers/Observers who have expertise in, or qualification to evaluate the activity in their assigned location. Controllers/Observers will evaluate exercise performance on the basis of requirements contained in the Emergency Plan Implementing Procedures, and exercise messages. Controllers/Observers will prepare evaluation forms and provide recommendations on corrective actions to the Exercise Coordinator.

After the Exercise is completed, the Exercise Coordinator will conduct a post-Exercise critique. Deficiencies in the Emergency Plan, Implementing Procedures, the emergency preparedness training program, facilities, equipment and/or other areas will be identified through the critique process. The deficiencies will be documented by the Exercise Coordinator and corrected by the individuals who have responsibility in the area of the identified deficiency.

Controller and Observer information is contained in Section 5.0.

The schedule for the critiques is shown in Section 6.0.



SECTION 3.0
TRAVEL INFORMATION

3.0 TRAVEL INFORMATION

This section of the Exercise Manual provides travel information to those individuals from RG&E, other utilities, local/State/Federal government, and/or other organizations who will participate/observe the exercise.

Permission for Visitors to observe the Exercise must be obtained from the Corporate Emergency Planner, Rochester Gas and Electric Corporation, 89 East Avenue, Rochester, New York 14649-0001.

3.1 Directions to the Ginna Nuclear Station

The Ginna Station is located on the southern shore of Lake Ontario in Wayne County, New York, approximately 24 miles northeast of Rochester, New York (see Figure 3.1).

3.1.1 Air

Several airlines provide passenger service to the Rochester-Monroe County International Airport.

3.1.2 Car

1. Several car rental agencies are available at the Rochester-Monroe County International Airport to provide rental vehicles for ground transportation to the Ginna Station.
2. Persons traveling from the Rochester-Monroe County International Airport via auto should take State Highway 204 East to Interstate 390 South. Interstate 390 becomes Interstate 590 as one proceeds around the outer loop. Follow I-590 to State Highway 590 to State Highway 104 East. Follow State Highway 104 to State Highway 350 (Ontario-Center Road). Turn left (North) and proceed to the Ginna Station. Total distance is approximately 40 miles.

3.2 Directions to the EOF, ESC and ENJC

3.2.1 Air

From the Rochester-Monroe County Airport take 204 to 390 North, 490 East into the City onto the Inner-loop to the East Avenue Ramp to the third signal light. Turn right.

3.2.2 Car

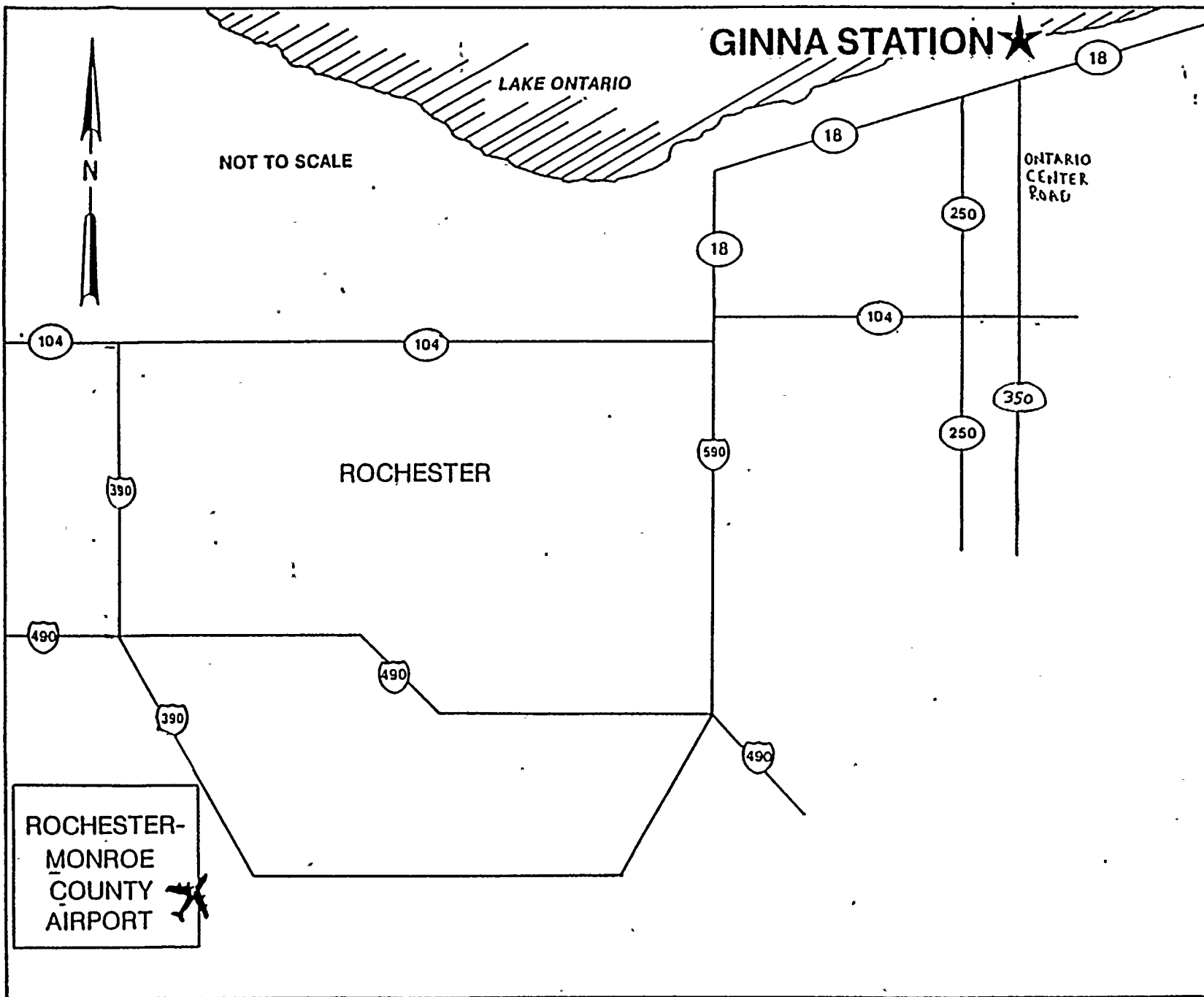
From the Thruway use Exits 45 or 46 into Rochester and the Inner-loop to the East Avenue ramp as in 3.2.1.

3.2.3. To get to the Emergency Operations Facility and Engineering Support Center go to the intersection of East Avenue and Chestnut Street (Black square on map). EOF and ESC are in 49 East Avenue. The EJNC is at 89 East Avenue (See Figure 3.2).

3.3 Accommodations

Hotel/motel accommodations may be obtained at the following locations:

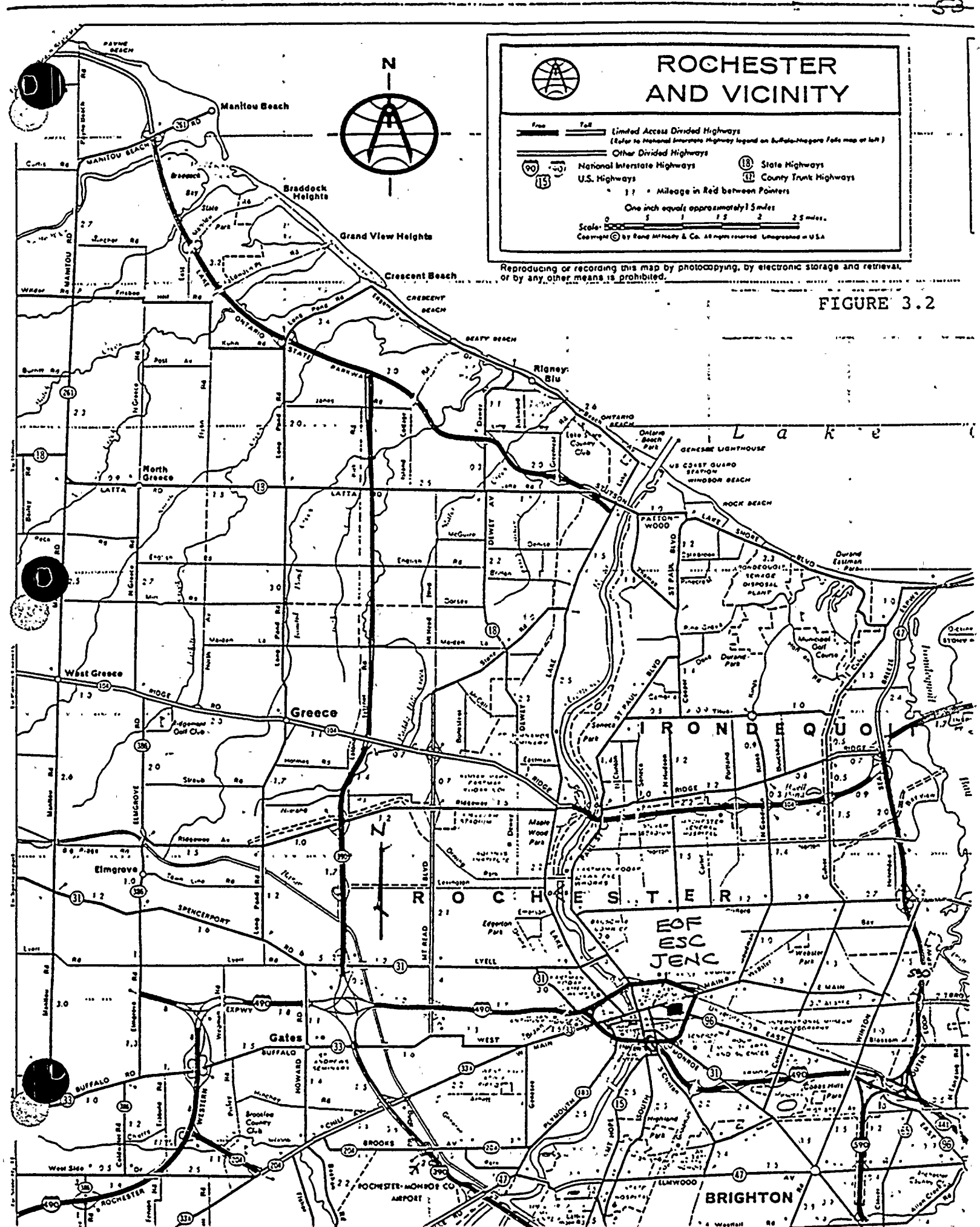
Depot Hotel, Pittsford	716-381-9900
Marriott Hotel, Greece	716-225-6880
Red Roof Inn, Henrietta	716-359-1100



PLANT: **GINNA STATION**
LICENSEE: Rochester Gas & Electric Corp.

LOCATION: Ontario, N Y

FIGURE 3.1



ROCHESTER AND VICINITY

Free Toll Limited Access Divided Highways
(Refer to National Interstate Highway legend on Buffalo-Niagara Falls map of left)

Other Divided Highways

National Interstate Highways 18 State Highways
U.S. Highways 11 County Trunk Highways

11 Mileage in Red between Pointers

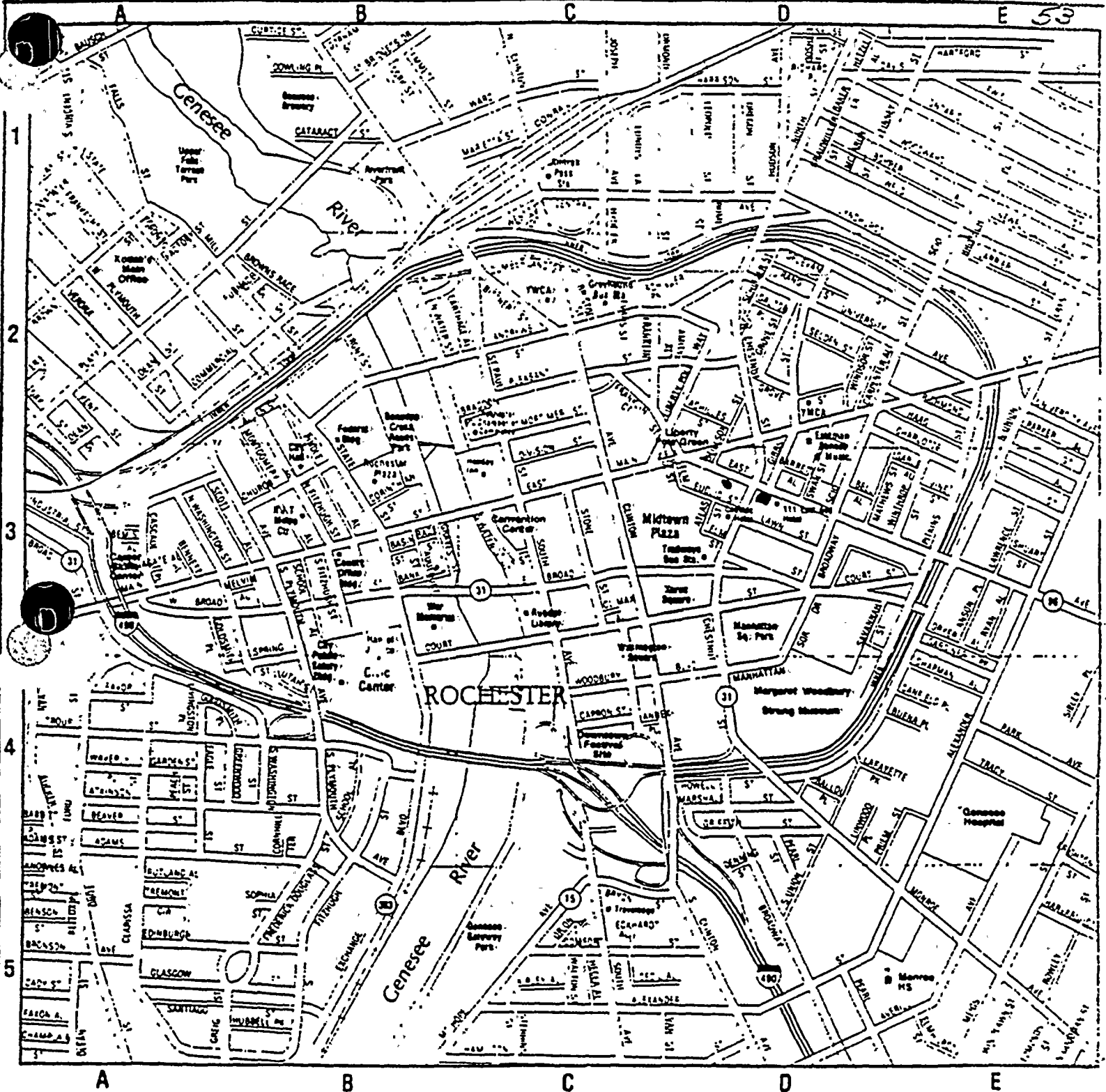
One inch equals approximately 1.5 miles

Scale: 0 1 2 3 miles

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FIGURE 3.2



Government Offices

City Hall
City Public Safety Building
Civic Center
County Office Building
Federal Building
Hall of Justice

Hotels & Motels

Cadillac Hotel
Holiday Inn
Rochester Plaza
Travelodge

Points of Interest

Amtrak Passenger Service
Eastman School of Music
Eastman Theatre
Genesee Brewery
Grayhound Bus Station
Kodak's Main Offices
Midtown Plaza
Rochester Chamber of Commerce
RIT Metro Center
Rundel Library
Strong Museum
Trailways Bus Station
War Memorial
Xerox Square
YMCA

Parks

Downtown Festival Site
Genesee Crossroads Park
Genesee Gateway Park
Liberty Pole Green
Manhattan Square Park
Riverfront Park
Washington Square

● EDF - 49 EAST AVE.

■ TNC - 89 EAST AVE.

SECTION 4.0

REFERENCES/ABBREVIATIONS - ACRONYMS



4.1 REFERENCES

- 4.1.1 10CFR 50.47, 50.54, Appendix E
- 4.1.2 44CFR 350.9
- 4.1.3 NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 4.1.4 RG&E Nuclear Emergency Response Plan and Implementing Procedures, Rev. 5 (5/87)
- 4.1.5 GS Radiation Emergency Plan Implementing Procedures (SC)
- 4.1.6 GS License and Technical Specifications
- 4.1.7 GS Piping and Instrumentation Drawings
- 4.1.8 New York State Radiological Emergency Response Plan (10/84)
- 4.1.9 Monroe County Emergency Preparedness Plan (5/87)
- 4.1.10 Wayne County Radiological Response Plan (10/86)

4.2 ABBREVIATIONS - ACRONYMS

4.2.1	A/E	Architect Engineer
4.2.2	ALARA	As Low As Reasonably Achievable
4.2.3	ARMS	Area Radiation Monitor(s)
4.2.4	ATWS	Anticipated Transient Without Scram
4.2.5	CD	Civil Defense
4.2.6	CFR	Code of Federal Regulations
4.2.7	CV	Containment
4.2.8	CR	Control Room
4.2.9	DOE	Department of Energy
4.2.10	DOE-IRAP	DOE Interagency Radiological Assistance Plan
4.2.11	EAL(s)	Emergency Action Level(s)
4.2.12	EBS	Emergency Broadcast System
4.2.13	EC	Emergency Coordinator
4.2.14	EOC	Emergency Operations Center
4.2.15	EOF	Emergency Operations Facility
4.2.16	EPA	Environmental Protection Agency
4.2.17	EPC	Emergency Planning Coordinator
4.2.18	EPIP(s)	Emergency Plan Implementing Procedures(s)
4.2.19	EPZ	Emergency Planning Zone
4.2.20	ERF(s)	Emergency Response Facility(s)
4.2.21	ERPA	Emergency Response Planning Area
4.2.22	ESC	Emergency Survey Center
4.2.23	FEMA	Federal Emergency Management Agency
4.2.24	FRERP	Federal Radiological Emergency Response Plan
4.2.25	GS	Ginna Station
4.2.26	HP	Health Physicist
4.2.27	HPN	Health Physics Network
4.2.28	HVAC	Heating Ventilation Air Conditioning
4.2.29	INPO	Institute of Nuclear Power Operations
4.2.30	JENC	Joint Emergency News Center
4.2.31	KI	Potassium Iodide
4.2.32	LCO	Limiting Condition of Operation
4.2.33	LOCA	Loss of Coolant Accident
4.2.34	LWR	Light Water Reactor
4.2.35	MPC	Maximum Permissible Concentration
4.2.36	NRC	Nuclear Regulatory Commission
4.2.37	OSC	Operational Support Center
4.2.38	OOS	Out of Service (on-site)
4.2.39	OOS	Out of Sequence (off-site)
4.2.40	PAG(s)	Protective Action Guide(s)
4.2.41	PAR(s)	Protective Action Recommendation(s)
4.2.42	PASS	Post Accident Sampling System
4.2.43	PIO	Public Information Officer
4.2.44	PWR	Pressurized Water Reactor
4.2.45	RCP	Reactor Coolant Pump
4.2.46	RCS	Reactor Coolant System
4.2.47	RHR	Residual Heat Removal
4.2.48	RG&E	Rochester Gas and Electric Corporation
4.2.49	RST	Radiation Survey Team
4.2.50	SC	Site Contingency
4.2.51	SI	Safety Injection
4.2.52	SPING	High Range Effluent Monitor
4.2.53	TSC	Technical Support Center

SECTION 5.0
CONTROLLER AND EVALUATOR INFORMATION



5.0 CONTROLLER AND EVALUATOR INSTRUCTIONS

Each controller and evaluator should be familiar with the following:

- a. The basic objectives of the Exercise.
- b. The assumptions and precautions being taken.
- c. The exercise scenario, including the initiating events and the expected course of actions to be taken.
- d. The various locations that will be involved and the specific items to be observed when at those locations.
- e. The purpose and importance of the evaluation checklist and record sheets.

5.1 CONTROLLER INSTRUCTIONS

- 5.1.1 Controllers will position themselves at their assigned locations prior to the activation of the facility for which they have responsibility. (See Section 5.3).
- 5.1.2 Communications will be tested to ensure satisfactory communications among Controllers prior to Exercise commencement. All watches and clocks will be synchronized with the Lead Control Room Exercise Controller as part of the communications testing.
- 5.1.3 All Controllers will comply with instructions from the Lead Controller.
- 5.1.4 Each Controller will have copies of the messages controlling the progress of the exercise scenario. No message shall be delivered out of sequence or other than as written unless specifically authorized by the Lead Controller.
- 5.1.5 Messages controlling the progress of the scenario are noted with a number. Contingency messages are noted with a number followed by the letter "X" (e.g., 10X).
- 5.1.6 Each on-site Controller will have copies of time-related plant data sheets. Data sheets will be distributed only in the Control Room. Radiological and meteorological data will also be provided at locations where it is normally available.
- 5.1.7 Controllers will not provide information to the Players regarding scenario development or resolution of problem areas encountered in the course of the simulated emergency.

The Exercise participants are expected to obtain information through their own organizations and exercise their own judgement in determining response actions and resolving problems.

5.1.8 Some Players may insist that certain parts of the scenario are unrealistic. The Lead Controllers have the sole authority to clarify any questions regarding scenario content.

5.1.9 Each Controller will take detailed notes regarding the progress of the Exercise and the responses of the Exercise participants at their respective assigned locations. Each Controller will carefully note the arrival and departure time for participants, the times at which major activities or milestones occur, and problem areas encountered. The Controllers will retain their notes for the purposes of reconstructing the Exercise chronology and preparing a written evaluation of the Exercise.

5.2 EVALUATION INSTRUCTIONS

Each Controller/Evaluator will take detailed notes regarding the progress of the Exercise and the response of the Exercise participants at their respective assigned locations. Each Controller/Evaluator should carefully note the arrival and departure times of participants, the times when major activities or milestones occur, and problem areas encountered.

The standards below should be used by the controller/evaluator to evaluate assigned areas pertaining to the emergency response. A dual purpose will be served by this rating system. First, the capability of each facility or response area will be evaluated and second, the system will provide a vehicle for guiding and directing improvement. The rating scale is as follows:

Good - Personnel and equipment generally performed better than expected. Any errors or problems were minor and easily correctable.

Satisfactory - Personnel and equipment generally performed as expected. Any errors noted were not severe and could be corrected without undue labor or expense.

Unsatisfactory - Personnel and equipment generally performed below expectations and there were several significant deficiencies noted. The area's ability to carry out its functions was diminished.

NA - Not applicable to the situation or not observed.

Controller/evaluator comments should consider the demonstration of the following facility and team evaluation elements:

5.2.1 Facility

- o Accurate and timely determination of emergency action levels.
- o Timely activation and staffing for each emergency action level.
- o Familiarity of personnel with appropriate emergency instructions, duties and responsibilities.
- o Timely notification of Rochester Gas and Electric Corporation, local, State and Federal personnel/agencies (information updates performed).
- o Adequacy of internal information systems (i.e., message handling, displays, status boards and maps).
- o Properly controlled documentation and accurate, timely record-keeping.
- o Utilization of correct communications procedures and techniques.
- o Capability of facility supervisor/directors to interface with personnel and coordinate facility activities.
- o Consideration of personnel safety (exposure control).
- o Adequacy of interface between emergency response facilities.
- o Adequacy of equipment and supplies.
- o Timely initiation of on-site protective/corrective actions.
- o Development of protective action recommendations.
- o Radiological surveys and assessment of plant damage and hazardous conditions performed.
- o Timely request of emergency support services.
- o Coordinated, accurate and orderly dissemination of information to the news media.

5.2.2

Team

- o Timely notification and activation.
- o Adequacy of staffing.
- o Familiarity with appropriate emergency procedures, duties and responsibilities.
- o Availability and utilization of proper equipment.
- o Performance of contamination/decontamination control.
- o Proper interface with emergency support personnel.
- o Utilization of correct communications instructions and techniques.
- o Availability of reference documents to team members.
- o Utilization of proper radiological control practices (i.e., access control, protective clothing, shielding, stay time).
- o Performance of radiological surveys.
- o Timely and proper performance of damage assessment.
- o Properly maintained survey records and maps.
- o Adequacy of briefing sessions prior to dispatch.
- o Direction and control by team leaders.
- o Timely requests for off-site assistance.
- o Coordination and interface between emergency response team members.
- o Proper interface with plant supervisory personnel. Controllers/observers will record their comments for the purpose of reconstructing the Exercise chronology and preparing a written evaluation of the Exercise.

5.3 PERSONNEL ASSIGNMENTS

Table 5.1 lists the Personnel assignments for the On-Site Controller organization;

Table 5.2 lists the Personnel Assignments for the Off-Site Controller Organization.



5.4 EVALUATION PACKAGES

The following Evaluation packages will be provided to the appropriate Controllers/ Observers at the Pre-Exercise briefing:

Control Room
Technical Support Center
Operational Support Center
Emergency Survey Center
Emergency Operations Facility
Joint Emergency News Center
Health Physics Personnel
Dose Assessment (TSC and EOF)
Radiation Survey Teams (ESC and EOF)
Post Accident Sampling System
Fire Brigade



TABLE 5.1
1987 GINNA EXERCISE
Controller Organization

Control Room

Frank Maciuska	(Lead)
Rex Smith	
Bob Hynes	(Start)

Technical Support Center

Dick Marchionda	(Lead)	
Bob Hynes	Operations Assessment	
Bob Elias	Technical Assessment	
Bob Wood	Security	
Al Salemi	Dose Assessment (Ni Mo)	
MaryAnn Chaubard	Health Physics (NYPA)	(O)
Art Zarembo	Communications/General (NYPA)	(O)
Mark Prairie	General (NYPA)	(O)

Operations Support Center

Gene Eng	(Lead)
Dick Biedenbach	Mechanical/Fire
Gregg Joss	Operation/Testing
Mike Leach	I&C
Jim Bement	Health Physic Techs
Bob Dangler	Operations

Emergency Survey Center

Barb Butler	(Lead)
Jim Knorr	Team
Kathy Hart	Team
Frank Pavia	Team
Frank Schwind	Team
Bryan Methe'	Team
Pat Phelan	Team

(O) Indicates Observer Only

October 14, 1987

Page 2

Emergency Operations Facility

Dave Burke	(Exercise Coordinator)	
Wes Backus	(Lead Operations)	
Rick Watts	(Lead Dose Assessment)	
Diane Dreikorn	Dose Assessment (LILCO)	
Rich Rossin	Communications (LILCO)	(O)
Steve Meister	Survey Team	
George Lawler	Survey Team	
Mike Peckham	General (NYPA)	

Emergency Joint News Center

Dick Sullivan	(Lead)	
Ed Kaish	(Ni Mo)	(O)
Todd Forte		(O)

Engineering Support Center

Charles Anderson	(Lead)	
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(O) Indicates Observer Only

TABLE 5.2

1987 - R.E. GINNA UNANNOUNCED/OFFHOURS EXERCISE
OBSERVER/EVALUATOR ASSIGNMENTS

	<u>Monroe County</u>	<u>Wayne County</u>
EOC	Roberta Fox Marvin Silverman	John Gibb
Dose Assessment	Robert Alibozek	Barbara Ignatz
Field Monitoring	George Brozowski Bob Theesfeld	Dave Bell Bill Wigley
RC/CC High School	Ken Bergmann (6:00 PM)	Bill Campbell (7:00 PM)
EW/PMC	N/A	Tom Coulthard (interview only at facility)
School Bus Run	Kevin Kraus (between 9:00 AM & 12:00)	Tom Coulthard (after 9:00 AM)
General Pop. Bus Run	Kevin Kraus	Bill Campbell
Traffic Control Point	Fred Bera	N/A
Road Impediment	Fred Bera	N/A
Route Alert	N/A	Tom Coulthard (interview only at facility)



GINNA NUCLEAR STATION
1987 EVALUATED EXERCISE

5.5 PUBLIC INFORMATION AND RUMOR CONTROL QUESTIONS FOR THE EVALUATED EXERCISE

A significant aspect of emergency response is to provide the news media and general public with accurate and timely information about the incident. Public perception and reaction are influenced by the information relayed to them. To ensure that the Rochester Gas and Electric Emergency Response Organization is prepared to deal with the media during an incident at the Ginna Station, the exercise provides certain elements that test Public Information activities. During the course of this exercise, the Rochester Gas and Electric Joint Emergency News Center (JENC) will be activated and exercised.

Special Exercise Controllers have been selected to test the Rumor Control and News Media Contact Staffs, as well as the JENC. Controllers will act as concerned citizens, employees, and as members of the media, posing questions to the staffs. When acting as members of the media, controllers shall make up a name and a media outlet (print or electronic) not located in the Rochester area. Each time a rumor control message is delivered, a different fictitious name and address will be given. The phone number to be given will be the number from which the exercise controller is calling so as to allow the county Rumor Control person(s) to return calls with appropriate information, if necessary. The exercise controllers should maintain the theme of each rumor control message and answer inquiries of the counties' Rumor Control persons appropriately.

The following pages denote questions that these controllers can use. The questions are grouped by time in relation to the events specified in the Exercise Scenario. The Controllers are allowed to use questions previously utilized. The lead JENC Controller shall verify that the exercise is adhering to schedule, otherwise time adjustments will be necessary. Space is provided for controllers to make notes on the response. Controllers need not use the questions herein; indeed, free play is encouraged. However, controllers must not get carried away with unusual questions.

When calling in questions, always precede questions with "This is an exercise." If you are playing a reporter at the JENC, free play questions based on the information given during the briefing. Additionally, ask questions about RG&E, the state or counties, background on Ginna

GINNA NUCLEAR STATION
1987 EVALUATED EXERCISE

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When calling in questions, always precede questions with "This is an exercise." If you are playing a reporter at the JENC, free play questions based on the information given during the briefing. Additionally, ask questions about RG&E, the state or counties, background on Ginna

Station, radiation, state/county/utility interface,
protective actions, etc.

Questions and relevant telephone numbers will be distributed at the special Pre-Exercise Controllers Briefing.

Attachment 1 lists Public Information questions generally for RG&E; Attachment 2 lists County Rumor Control Questions.

GINNA STATION

1987 EVALUATED EXERCISE
PUBLIC INFORMATION QUESTIONS

TIME

- 0400o This is _____ from Radio Station WSMR. We understand that there is an emergency at the Ginna Nuclear Plant. What is happening?
- 0430o My husband's a volunteer fire fighter. He said he's heard that there's a fire at the nuclear plant. I'm worried. What is happening there?
- 0500o This is _____ from the Albany Post. I understand that you have a leak at the Ginna Station. What's going on up there?
- o How big is the leak?
 - o Where is the leak?
 - o What are you doing to fix it?
 - o How dangerous is the leak?
 - o How radioactive is it in there?
 - o Is this leak similar to the accident you had in 1982?
 - o What's the status of the plant?
 - o Any Radiation exposures?
 - o Whom have you notified?
- 0530o This is _____ from Radio Station WPJG. I hear you have a fire at the Ginna Station. Would you tell our listeners the story?
- o Was the damage done by the fire similar to the Browns Ferry Fire?
 - o Has any radiation been release? How do you know?
 - o Why didn't you call in the Wayne County Fire Department?
 - o Any injuries? Any radioactive contamination?
 - o Has the Nuclear Regulatory Commission been notified?
 - o Did you declare an emergency?
 - o How serious was the fire?
 - o Was the fire near the reactor?
 - o Did you evacuate the site? Why not?
 - o Is the reactor shutdown?
 - o How much is this going to cost us ratepayers?
- 0600o What is happening at the plant?
- Any injuries?
- o Has the NRC been notified?
 - o Have State and local officials been notified?
 - o How high are the radiation levels? Are they dangerous? Has anyone been over-exposed to radiation?
 - o Are any of those problems related to the accident you had in 1982?
 - o What are you doing to fix the problem?
 - o Are you evacuating the site?
 - o Is the reactor shutdown?
 - o Did you declare an emergency?
 - o What is the significance of an ALERT?



TIME

0630o I've heard you declared a Site Area Emergency. What's that? What happened?

- o Why don't you just shut the reactor down?
- o How big is the leak? Where is it coming from?
- o Where is the electricity going to?
- o Can't you just shut a valve or turn a switch or something?
- o Has anyone been killed? Any injuries?
- o I work at Beebee Station. What's going on at Ginna?
- o How is the reactor being cooled?
- o Is any radiation going into the lake?
- o When will the NRC be taking over the plant?
- o What's the plant doing now?
- o How much radiation is being released?
- o Where is the wind blowing?
- o Have State and local officials been notified?
- o How serious is the accident?
- o What is RG&E doing?

0700o I have heard that you declared a General Emergency. Is this true? Why?

- o Has anyone been killed?
- o Has the State of New York been informed?
- o Has the NRC been informed?
- o How are you going to fix the reactor?
- o Can't you just shut a valve or something?
- o Is this accident similar to the one at Three Mile Island?
- o When will the NRC take over the plant?
- o What are electric rates going to be?
- o Where are you going to get power if Ginna is out of service?
- o Why won't the reactor shutdown?
- o Should I sell my RG&E stock?
- o How much of this was caused by the poor management?
- o In Layman's terms, what caused this disaster?

0730o What effect will this have on RG&E stock?

What do you think the Securities Exchange Commission will do?

- o I've heard that you are going to use RG&E pension funds to pay for the Ginna accident. Is this true?
- o What was your stock selling for this morning?
- What is your stock selling for now?

0800o How much radiation is being released?

- o How is the radiation filtered? How dangerous is it?
- o Who is in charge of the emergency?
- o When will the next press briefing be held?
- o When will reactor be shutdown?
- o Where is the radiation heading?
- o What protective actions have been recommended?
- o Whom should I call for further information concerning Wayne (Monroe) County?



TIME

- o I'm calling from the high school care center. I want you to help me find my brother; we both evacuated, but I don't know where he's gone.
- o I heard the accident at the Ginna Station is over. When are we gonna be allowed to go home? Why haven't you made the announcement on TV?
- o What is the Governor doing?
- o What is the status of the fire that occurred this morning?
- o I've heard that the reactor has a hole in it. Is this true?
- o Do you have insurance? Who will pay for this? My homeowner's insurance states that I am not covered for nuclear accidents!

1000 Note to Controllers: The Exercise is terminated.

TIME

0730o What's this I here about an explosion at Ginna? Is that what caused the plant to send everybody home? How many got hurt and who's gonna run the plant now?

- o Has the aftershock caused more damage?

0800o (Note: This caller is under the mistaken impression that Ginna has been abandoned and is now being operated remotely from the County EOC.)

- o My wife is concerned because she doesn't think you county disaster people know what you're doing? I told her not to worry because the County Executive (Monroe) or the Chairman of the Board of Supervisors (Wayne) knows how to run the plant because he's practiced it before. Just one thing, why doesn't he turn it off before we get melted down?

- o I don't trust the power plant people; they'd lie to save their own skins. Do you have anybody checking on them?

- o Should I close my business due to the disaster? Who will pay for the lost income?

(The business is Bill Gray's Restaurant on Route 104.)

0830o What are we supposed to do? Where do I go?

- o I heard nobody at Ginna knows what the hell is going on! Is it true that Federal people are coming to take over? Are they gonna fix it?

- o I heard the siren but nobody said which way to go. Charlie, my neighbor, says the siren doesn't mean to go; you is supposed to hide! What is it?

0900o I hear that nursing homes will evacuate their patients. My mother is in the Hill Haven nursing home. Where will she be when it's over so I can go make sure she's okay?

- o I'm leaving now? Where can I pick my son up? He goes to Wayne Central Middle School.

- o I'm evacuating now. Where can I pick up my son? He goes to (Later).

- o I am supposed to leave but don't have a place to stay. Which school can I stay at? How do I get there? Who's going to pay my expenses? Wo do I call to get a check for my expenses?

0930o Is it true that the milk is now poison? What shall I feed my baby?

- o We don't have no money. Is the government going to give us some so we can get away from the radiation?

RUMOR CONTROL MESSAGES
FOR WAYNE AND MONROE COUNTY

TIME

- 0330o I was just knocked out of bed. I called the 911 emergency number. They said we had an earthquake by the nuke plant and to call RG&E for more information. What should I do? I didn't hear the sirens, why not? Is the plant coming apart? What in hell is Morin/Decker doing about it?
- o This earthquake scared hell out of my family? How bad is it? I've got a lot of broken dishes. How does it compare to the L.A. quake? What is it on the Richter scale? Are we going to get aftershocks? How do you know/Why don't you know? (Is there anyone there that knows anything?) I want to talk to Lou Morin/Marv Decker. Why Not? Where is he hiding?
 - o Is October earthquake month - First in L.A., then in Kentucky, earlier in the Adirondacks and in 1983 here. Can't you close the plant shut - it'll be one less thing to worry about.
- 0400o I hear there's an earthquake emergency at the nuclear power plant.
- o How will I know when to evacuate?
- 0430o I'm Roberta Gibson of Radio Station WSFC. Can you tell our listeners what's happening at the Ginna Nuclear plant?
- o How much damage did the earthquake do to the plant?
- 0500o Has any radiation been released yet?
- o How can you be sure?
 - o How can I find out when there is a release?
- 0530o Wayne County
- ... This is a drill. My daughter goes to the Freewill Elementary School. Where can I go to pick her up?
Where can I pick her up once the kids are evacuated?
- o Monroe County
This is a drill. My daughter goes to the Klem Road South Elementary School. Where can I go to pick her up?
Where can I pick here up once the kids are evacuated?
- 0600o We've lost our emergency information handbook and need one right away. Will one of the emergency people you have deliver one to us?
- 0630o If there's an evacuation, I'm going to need help with my father who is bedridden due to a heart attack last month. Can you help me?
- 0700o I wanna talk to the (County) Commissioner. (Reason?) I wanna know if this here accident is gonna cost us taxpayers or will the Electric Company pay for it?
- o I live near the plant and don't want that nuclear electricity into my house. Change it now or I'll call the Public Service Commission! Do you hear me?!

TIME

- 0830o Is the reactor shutdown? How did it happen?
- o Is this plant similar to Shoreham?
 - o What is the reactor building doing now? Is the hole fixed?
 - o How much radiation was released off-site?
 - o What protective actions are in effect for Wayne (Monroe) County?
 - o How many people live in Wayne (Monroe) County?
 - o What are you going to do to fix the situation?
 - o When is the next press briefing?
 - o How many media are at the News Center?
 - o What agencies are at the News Center?
 - o Where is the wind going?
 - o Who's in charge of the emergency?
- 0900o I'm John Smith from Livingston County. My neighbor said they expect the radiation to blow all the way down here. What should I do about my farm? I'm in the middle of harvesting hay. Who's going to pay me for my losses?
- 1000o NOTE TO CONTROLLERS: The Exercise is terminated.

SECTION 6.0

1987 GINNA FULL SCALE PLUME EXPOSURE PATHWAY EXERCISE

AND

NEW YORK STATE INGESTION PATHWAY EXERCISE

SCHEDULE OF EVENTS

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SECTION 6.0

1987 GINNA FULL SCALE PLUME EXPOSURE PATHWAY EXERCISE
AND
NEW YORK STATE INGESTION PATHWAY EXERCISE

SCHEDULE OF EVENTS

10/21	0900	OFFSITE PLAYER BRIEFING	EOF
	1330	ONSITE PLAYER BRIEFING	TRAINING CTR
10/22	0900	CONTROLLER BRIEFING	TRAINING CTR
WEEK OF 10/25 BEGINNING AT 0001 HOURS			
DAY 1	OFF HOURS UNANNOUNCED	PLUME EXPOSURE PATHWAY EXERCISE	ALL
DAY 1	AFTER EXERCISE TERMINATION AND BREAK	INGESTION PATHWAY BRIEFING (REDUCED STAFF)	EOF
DAY 2	0900	STATE FIELD MONITORING/SAMPLING ACTIVITIES (NO GINNA PARTICIPATION)	IPZ
DAY 3	0830	INGESTION PATHWAY UPDATE BRIEFING	ALBANY/EOF
	1000	INGESTION PATHWAY TABLETOP DRILL (START OF PLAY)	ALBANY
		REDUCED STAFF PARTICIPATION	EOF
DAY 4	0800	GINNA CRITIQUE	TRAINING CTR
	1000	NRC CRITIQUE	TRAINING CTR
	TBD	FEMA NEWS CONFERENCE	EJNC

GINNA STATION 1987 EMERGENCY PREPAREDNESS EVALUATED

EXERCISE NARRATIVE SUMMARY

Initial conditions for the scenario and their relevance to the course of the scenario are as follows:

1. The unit has operated continuously at full power for 145 days. This long full power run assures a large buildup of fission products for subsequent release during the scenario.
2. The turbine driven auxiliary feedwater pump is out for maintenance with all parts available. This pump being out of service does not affect the outcome of the scenario at all but will cause some thought and worry during the scenario due to the possibility of a loss of all AC power.
3. The reactor core is in cycle 16 with RCS boron concentration at approximately 20 ppm. The boron concentration indicates that the core is near end of life. This will assure that when the steam break accident occurs, the largest amount of positive reactivity will be inserted in the core, (due to the moderator coefficient) during the subsequent cooldown.
4. Containment spray pump 1A is inoperable and will be incapable of being repaired during the scenario. This coupled with the loss of the 1B containment spray pump and two of the 4 containment fan coolers, (due to the Bus #16 outage), will assure as high of a containment pressure as possible during the steam break.

The loss of the above equipment should lead the emergency response personnel to worry about containment being breached, the lack of iodine removal from the containment atmosphere and if the containment is breached the high driving force for release of the containment atmosphere.

5. Safety injection pump suction valve from the boric acid storage tanks, MOV-826B has failed during a monthly test. The failure of this valve coupled with the loss of MOV-826D, (with the loss of #16 Bus) in the redundant path will assure that no 12% boric acid is injected for the steam break accident, thus allowing power to peak higher during this accident than normal.
6. The unidentified leak rate of 1.25 gpm is a driver for the scenario unusual event.



Scenario narrative of events and their relevance to the course of the scenario are as follows:

The first major action milestone in the scenario occurs just after 0130 hours when the unidentified leakrate of greater than 1 gpm has been occurring for more than 4 hours. This requires the Shift Supervisor to declare an Unusual Event and notify offsite agencies.

The next major event in the scenario is an earthquake. The earthquake requires that the control room take certain actions per SC-5 such as:

1. Checking the accelerometerograph and when the red target is indicated on the action indicator, having I&C remove the film and send it out for immediate developing. The red target indicated on the action indicator (earthquake registering greater than .01g) is also a Unusual Event action level.
2. Start one emergency Diesel Generator.
3. Perform a rod control operability test. When they do this 2 rods will indicate inoperable and by Technical Specifications a shutdown to hot shutdown must be accomplished within 6 hours.
4. Tour the plant for visible damage.

A more subtle event from the earthquake is the cracking of the weld on the "A" Steam Generator steam line with the only indication being the increase of dumping the containment recirculation fan cooler condensate collectors.

A plant shutdown because of the 2 inoperable control rods commences about 0200 hours.

At 0210 a fire is indicated in the Auxiliary Building near #16 480 volt safeguards bus. The fire brigade is activated and responds to the fire. The fire is in the #16 bus transformer. It is believed here that the earthquake induced the fire by damaging the insulation on the windings. At 0225 the normal feed to #16 bus trips out due to the transformer grounding out and the 1B Emergency Diesel Generator starts and loads on to Bus #16. An Alert should be declared at this point in accordance with SC-100, "Ginna Station Event Evaluation and Classification" (i.e. fire potentially affecting safety systems as determined by the Shift Supervisor). The primary reason for the fire on #16 480 volt bus transformer is to take away one of the two feeds to the bus and then later on in the scenario remove the other feed to the bus (i.e. the 1B Emergency Diesel Generator). Bus #16 being dead during a major part of the scenario allows a greater release from containment to take place (i.e. no containment spray) and allows an isolatable release path once power is restored to the Bus, (i.e. MOV-851B).



At approximately 0240 the fire is extinguished in Bus #16 transformer.

At approximately 0310 the TSC response organization should be manned and at approximately 0345, the TSC, OCS, and the Survey Center should be nearing full operational status.

At approximately 0400 the 1B Emergency Diesel Generator trips out on low bearing oil pressure. This completes the loss of all feeds to #16 480 volt safeguards bus as mentioned earlier. Major equipment lost with the loss of the bus that impacts the scenario is the 1B containment spray pump and motor control center (MCC 1D) which supplies the AC power to the release isolation valve 851B. Also lost with MCC 1D is 826D which is mentioned in Initial Conditions #5. The loss of this valve causes the steam break accident to be much more severe causing greater fuel damage and fission product release.

If TSC decides to cross-tie buses 14-16 one of the two tie breakers involved will not close due to mechanical problems.

At approximately 0415 a Site Emergency should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification", fire causing loss of safety system including redundant components (i.e. loss of both containment spray pumps) or events in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. At this time a Site Evacuation should occur with accountability being done.

At 0430 results are received from the developing of the accelerograph film. These results indicate an earthquake of .24g has occurred. A Site Emergency should be declared if not already done earlier due to plant not in cold shutdown and earthquake greater than .2g as determined by developing accelerograph film. At about this same time the TSC should be sending repair teams out to repair the 1B Emergency Diesel Generator, the 480 volt Bus 14-16 tie breaker and possibly a repair team to complete maintenance on the turbine driven feedwater pump.

At approximately 0515 the EOF, JENC, and Engineering Support Center should be nearing full operational status. At about this same time, the repair team sent out to check out the 1B Emergency Diesel Generator should report back that the lube oil pump on the Diesel Engine has a cracked casing and it will take approximately four hours to repair.

At approximately 0530 the "A" Steam Generator steam line severs where it exits the Steam Generator. Containment pressure and temperature increases rapidly. SI and containment spray are actuated automatically. The two control rods that were inoperable earlier remain fully withdrawn. High head SI pumps swap immediately to the RWST instead of drawing initially from the 12% boric acid tanks due to the inoperable MOV-826B valve and the loss of the MOV-826D valve (Bus 16 outage). The



core returns to power and a large amount of the fuels gap and fuel pellet activity is released due to cladding failure and fuel pellet overheating. At this time the status sheets indicate core uncover and fuel overheating mainly in the area of the two stuck control rods where it is envisioned that most of the core power is being generated. The containment pressure is seen to buildup rapidly because no containment spray pumps are available due to Initial Condition #4 and Bus 16 outage.

A General Emergency should be declared at this time in accordance with SC-100 "Ginna Station Event Evaluation and Classification", inability to shutdown the reactor which results in core damage with indications of containment pressure increasing rapidly and reactor remains at power after reactor trip initiated, (i.e. power range indication) or failed fuel indicated by sampling of containment atmosphere and containment pressure 30 psig and increasing, or Shift Supervisor opinion containment may be breached. Immediate protective action recommendations should be made in accordance with SC-240 "Protective Action Recommendations". Operations stabilizes the plant using Emergency Operating Procedures.

At approximately 0630 the station experiences a severe after shock from the earthquake severing the two control rods pressure housings that have been leaking. These are the same two control rods that were stuck out. Reactor Coolant pressure rapidly decreases followed by containment pressure and radiation levels increasing. Safety injection will be initiated again but there will be no containment spray due to same existing problem as with the steam break. There is no offsite radiation release at this time.

At approximately 0645 the "B" RHR pump recirculation suction line from containment Sump B ruptures in the sub-basement of the Auxiliary Building due to the earthquake, the earthquake after shock and the containment pressure. Plant vent monitors from the Auxiliary Building show rapid increases in radiation levels. A major release to the environment begins at this time. The release path is from the containment through the "B" RHR pump recirculation suction line, out through this lines rupture in the Auxiliary Building sub-basement through the Auxiliary Buildings vent system out the plant vent.

After the release is started, efforts are initiated to track the released plume, terminate the release and implement/coordinate PARs. These efforts will continue until the release is terminated and the plume has dissipated.

At approximately 0800 the 1B Emergency Diesel Generator is repaired and returned to service. At this time power is available to MOV-851B and 1B containment spray pump. MOV-851B is closed terminating the release and 1B containment spray pump is placed in service to reduce containment pressure and temperature.



At approximately 0900 survey team samples and radiation readings indicate offsite radiation levels have significantly decreased due to plume passage. At this time short term recovery/re-entry discussions should follow actions expected in 0900 message #50.

SECTION 7.0

EXERCISE SCENARIO



72

GINNA STATION
1987 EMERGENCY PREPAREDNESS EVALUATED EXERCISE
INITIAL CONDITIONS

1. The R.E. Ginna Station is operating at 100% rated thermal power and has been operating continuously for 145 days.
2. The turbine drive Auxiliary Feedwater pump is out for replacement of the pump thrust bearing and thrust bearing cooler. All parts are available.
3. The Reactor Core is in cycle 16 near end of life. Boron concentration in the Reactor coolant system is 20 PPM.
4. Containment spray pump 1A is inoperable due to seized pump bearings since noon yesterday. Replacement parts are on order and expected to arrive this morning. Bearing replacement should then require about 1 day of actual work. Required surveillances are complete and satisfactory for today.
5. At 1600 hours yesterday, safety injection pump suction valve from the Boric Acid storage tanks, MOV 826B failed to open during performance of the quarterly safeguard valve operation periodic test (PT-2.3). Subsequent investigation revealed a grounded motor. The grounded motor has been removed and sent to the Motor Shop for repair. The motor is expected to be returned to the Station tomorrow at 0900 hours. Installation and testing is expected to be complete by 1400 hours tomorrow. All valves in the system that provide the duplicate function have been tested satisfactory for operability.
6. At 2130 hours last night, Reactor Coolant System total leak rate increased from 0.75 GPM to 1.5 GPM. Identified leak rate is approximately 0.25 GPM. Containment activity has increased significantly. The shift is continuing to investigate the cause of the leakage. A containment entry is planned as soon as the paperwork is complete.

CONTROLLERS NOTE: Operators should start performing procedures S-12.2 and AP-RCS.1 for leakage trouble shooting.

7. VCT level is decreasing approximately 1% every 8 minutes. Containment sump "A" pump starts automatically approximately every 54 minutes.

GINNA STATION
1987 EMERGENCY PREPAREDNESS EVALUATED EXERCISE
ON-SITE SEQUENCE OF EVENTS

<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
0045	-00/15	Initial Conditions established.
0100	00/00	Commence Exercise.
0130 UNUSUAL EVENT	00/30	<p>An UNUSUAL EVENT should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Reactor Coolant Leakage; primary system leakage greater than Technical Specification Limits (greater than 1 GPM unidentified for more than 4 hours). The 4 hour time limit expired at 0130 hours.</p> <p>If UNUSUAL EVENT not declared in <u>15</u> minutes, a contingency message should be given out to declare it.</p>

<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
0145	00/45	<p>The Station experiences a large tremor from an earthquake. Control Room personnel start performing the actions of SC-5 (Earthquake Emergency Plan). Operations checks the accelerograph and a red target is indicated on the action indicator at the bottom of the case. Update UNUSUAL EVENT notifications may be made due to earthquake at plant of greater than .01g as indicated by red target on action indicator at bottom of accelerograph.</p> <p>The "A" Emergency Diesel Generator is started per SC-5. Operations touring plant per SC-5. When PT-1 (Rod Control System) Operability Test is simulated, 2 control rods will not move.</p> <p><u>IF</u> in approximately 15 minutes, the Shift Supervisor or his designee do not notify I&C to remove the film from the accelerograph and send it to the Photo Lab, a contingency message should be given out to do so.</p>



APPROPRIATE
TIME

SCENARIO
TIME

EVENT DESCRIPTION

0200

01/00

Containment Recirculation Fan Cooler Condensate Collectors begin requiring dumping more frequently due to the earthquake cracking a weld on the "A" S/G Steam Line as it exits the S/G.

Plant commences an orderly shutdown to hot shutdown within six hours per Technical Specification 3.10.4.4 (i.e. with two or more rods inoperable, be in hot shutdown within six hours).



APPROPRIATE
TIME

SCENARIO
TIME

EVENT DESCRIPTION

0210

01/10

Fire Zone S-03 (Auxiliary Building Intermediate Floor Center - Bus 16 Area) first alarm is received in the Control Room. The Fire Brigade is activated and responds.

0220

01/20

The Fire Brigade arrives at the scene. Fire Brigade Captain reports to Control Room that the Bus #16 transformer is smoking with no flaming fire.

NOTE: Off-site fire fighting assistance is not participating. If assistance is requested, Controllers will intercede to prevent off-site fire department response.

APPROPRIATE
TIMESCENARIO
TIMEEVENT DESCRIPTION0225
ALERT

01/25

The 480 volt Bus #16 normal feed trips out due to #16SS transformer fault. The 1B Emergency Diesel Generator starts and Loads on to 480 volt Bus #16. Operations restores equipment lost when Bus #16 tripped out.

An ALERT should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Fire; Fire potentially affecting safety systems as determined by the Shift Supervisor.

If ALERT not declared in ~ 15 minutes, a contingency message should be given out to declare it.

0240

01/40

The fire in the 480 volt Bus #16 transformer is extinguished.

<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
0345	02/45	<p>The TSC, OCS, and the Survey Center are nearing operational status.</p> <p>TSC should send a repair team out to investigate 480 volt Bus #16 transformer damage.</p>
0400	03/00	<p>1B Emergency Diesel Generator Trips out on Low Bearing oil pressure. 480 volt Bus #16 Emergency Diesel Generator Tie breaker trips. There is no voltage on Bus #16, MCC-1D, MCC-1J, and MCC-1M. The following major equipment is lost: 1BMDAFWP, charging pump 1B and 1C, CCW pump 1B, CV recirculation fans 1B and 1C, CV spray pump 1B, RHR pump 1B, SI pump 1B and Standby Auxiliary Feedwater Pump 1D.</p>



<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
0415 SITE EMERGENCY	03/15	<p>Reactor shutdown continues.</p> <p>If the TSC decides to cross-tie buses 14-16, one of the two tie breakers will not close due to mechanical problems.</p> <p>A SITE EMERGENCY should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Fire; Fire causing loss of safety system including redundant components as determined by the Shift Supervisor; (i.e. Loss of both containment spray pumps), or EAL: Events in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public.</p>



<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
0430 SITE EMERGENCY	03/30	<p>Results from the developing of the accelerograph film indicates that an earthquake of .24g has occurred.</p> <p>A SITE EMERGENCY should be declared if not already done in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Natural Phenomenon being Experienced; Plant not in Cold Shutdown and earthquake greater than .2g as determined by developing accelerograph film.</p> <p>TSC sends Repair Team out to check out and repair the 1B Emergency Diesel Generator.</p> <p>TSC may send Repair Team out to finish maintenance on the Turbine Driven Auxiliary Feedwater Pump.</p> <p>TSC working on the leakage problem in containment.</p> <p>TSC may send Repair Team out to check out and repair tie breakers between 14-16 Buses.</p>

<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
		If SITE EMERGENCY not declared in ~ 15 minutes, a contingency message should be given out to declare it.
0515	04/15	<p>The EOF, JENC, and Engineering Support Center should be nearing Operational Status.</p> <p>Reactor shutdown continues.</p> <p>Containment Recirculation Fan Cooler Condensate collectors dumping frequency continues to increase indicating the "A" S/G weld crack is worsening.</p> <p>Repair Team sent out to check the 1B Emergency Diesel Generator reports to the TSC that the lube oil pump on the Diesel Engine has a cracked casing and it will take approximately four hours to repair.</p>

APPROPRIATE
TIME

SCENARIO
TIME

EVENT DESCRIPTION

0530

04/30

The "A" S/G Steam Line severs where it exits the S/G. Containment Pressure and temperature increases rapidly. Safety injection and containment spray are actuated automatically. Two Control Rods remain fully withdrawn. (These Control Rod pressure housings were the source of the "Initial Condition" unidentified RCS leak). The core returns to power and a large amount of the fuels, gap and fuel pellet activity, is released due to cladding failure and fuel pellet overheating. Containment Radiation levels start to increase rapidly.

Containment Spray does not initiate because 1B Containment Spray Pump inoperable due to Bus #16 outage, (1A spray pump inoperable as an initial condition).

There is no 12% Boric Acid injection to the core because MOV 826D inoperable due to Bus #16 outage, (MOV 826B inoperable as an initial condition).

APPROPRIATE
TIME

SCENARIO
TIME

EVENT DESCRIPTION

0535
GENERAL
EMERGENCY

04/35

A GENERAL EMERGENCY should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Loss of Engineered Safety Features; Inability to Shutdown the reactor which results in core damage with indications of containment pressure increasing rapidly and reactor remains at power after reactor trip initiated, (i.e. power range indication) or EAL: Containment systems; failed fuel indicated by sampling of containment atmosphere and containment pressure 30 psig and increasing or shift supervisors opinion containment may be breached.

An immediate protective action recommendation will be made in accordance with SC-240, "Protective Action Recommendations."

Operations stabilizes the plant using Emergency Operating Procedures.

If GENERAL EMERGENCY not declared in ~ 15 minutes, a contingency message should be given out to declare it.



APPROPRIATE
TIME

SCENARIO
TIME

EVENT DESCRIPTION

0630

05/30

The Station experiences a severe aftershock from the earthquake severing the two Control Rod pressure housings that have been leaking. Reactor Coolant system pressure rapidly decreases followed by Containment Pressure and radiation levels increasing. Safety injection SHOULD BE INITIATED AGAIN.

There is no offsite radiation release at this time.



APPROPRIATE
TIME

SCENARIO
TIME

EVENT DESCRIPTION

0645

05/45

The B RHR pump suction line from containment sump "B" ruptures due to the earthquake, the earthquake aftershock and containment pressure. The Auxiliary Building sump Hi level alarm annunciates in the Control Room.

"A" Auxiliary Building sump pump indicates it has tripped and will not restart.

Plant vent monitors show rapid increases in radiation levels. A major release to the environment begins.

Release path: Containment through "B" RHR suction line out the plant vent.



<u>APPROPRIATE TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT DESCRIPTION</u>
0700	06/00	Efforts are underway to track the plume, terminate the release and implement/coordinate PAR's.
0800	07/00	
0800	07/00	The release is terminated due to the repair of the 1B Emergency Diesel Generator with restoration of power to 480 volt Bus #16 and MCC-1D and the closing of MOV-851B.
0800	07/00	Plume tracking continues.
0900	08/00	
0900	08/00	Off-site radiation levels have significantly decreased due to Plume Passage. Down grade discussions are in progress. Recovery/-Re-entry discussions commence.
1000	09/00	The Plume Exercise is Terminated. Begin Ingestion Pathway phase.

SECTION 8.0

MESSAGE FORMS AND PLANT DATA SHEETS



Time: 0045

Message: I.C.

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Review initial conditions and plant status sheets with the operating crew.
- 2) Review exercise precautions/limitations and any exercise activities that are not normal (pre-staging, simulated notifications, extent of participation of off-site agencies, etc.).
- 3) Ensure that the operating crew understands that the exercise is not to interfere with safe plant operation.
- 4) Explain that the abbreviation "OOS" means "out of service", i.e. repairs must be made before the equipment can be used.

Actions Expected:

Participants should review initial conditions and plant data sheets.

GINNA STATION
1987 EMERGENCY PREPAREDNESS EVALUATED EXERCISE
INITIAL CONDITIONS

1. The R.E. Ginna Station is operating at 100% rated thermal power and has been operating continuously for 145 days.
2. The turbine driven auxiliary feedwater pump is out for replacement of the pump thrust bearing and thrust bearing cooler. All parts are available.
3. The Reactor Core is in cycle 16 near end of life. Boron concentration in the Reactor coolant system is 20 ppm.
4. Containment spray pump 1A is inoperable due to seized pump bearings since noon yesterday. Replacement parts are on order and expected to arrive this morning. Bearing replacement should then require about 1 day of actual work. Required surveillances are complete and satisfactory for today.
5. At 1600 hours yesterday, safety injection pump suction valve from the Boric Acid storage tanks, MOV 826B failed to open during performance of the quarterly safeguard valve operation periodic test (PT-2.3). Subsequent investigation revealed a grounded motor. The grounded motor has been removed and sent to the Motor Shop for repair. The motor is expected to be returned to the Station tomorrow. Installation and testing is expected to be complete by 1400 hours tomorrow. All valves in the system that provide the duplicate function have been tested satisfactory for operability.
6. At 2130 hours last night, Reactor coolant system total leak rate increased from 0.75 GPM to 1.5 GPM. Identified leak rate is approximately 0.25 GPM. Containment activity has increased significantly. The shift is continuing to investigate the cause of the leakage. A containment entry is planned as soon as the paperwork is complete.
7. VCT level is decreasing approximately 1% every 8 minutes. Containment sump "A" pump starts automatically approximately every 54 minutes.

1987 EVALUATED EXERCISE

Time: 0045

MAJOR PARAMETERS

Reactor Power Level 508 MWE/1520 MWT
 Reactor Shutdown Yes/No

NIS	N-41 <u>100%</u>	N-43 <u>100%</u>	
NIS	N-42 <u>100%</u>	N-44 <u>100%</u>	
RCS Pressure	<u>2235</u>		psig
RCS Temperature <u>Tavg</u>	<u>573</u>		oF
CHG. (FI-128)	<u>27</u>		GPM
Pressurizer Level	<u>50</u>		%
LTN. (FI-134)	<u>41</u>		GPM
Containment Pressure	<u>0</u>		psig
1A S/G Level	<u>52</u>		%
1B S/G Level	<u>51</u>		%
RVLIS	<u>100</u>		%
1A S/G Pressure	<u>750</u>		psig
1B S/G Pressure	<u>760</u>		psig
*CET	<u>602</u>		oF
Sump A Level	<u>1.8</u>		feet
Sump B Level	<u>0</u>		inches
A RCP	<u>Running/Stopped</u>		
B RCP	<u>Running/Stopped</u>		

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 21 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 95 %

Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 53 psig

Component Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0045

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.0E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.6E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.4E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	4.7E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	8.5E+3	GOOD	CPM
R10B	PLANT VENT IODINE MONITOR R10B	2.1E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.1E+5	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+1	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	7.1E+1	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	69.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	65.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	331	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	335	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	3.0	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	3.1	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0045

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	+3.84E-04	N/A
2	Part - Alpha	CPM	STANDBY	-1.90E+01	N/A
3	I-131	uCi	STANDBY	+5.42E-05	N/A
4	Bkg I	CPM	STANDBY	+3.47E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	-5.0E-06	3.70E-06
6	Area Monitor	MR/H	1.00E-01	-3.13E-02	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	-5.0E-06	-1.00-06
8	Gamma Bkg	CPM	STANDBY	-3.98E-02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	-1.3E-03	-1.40E-03
1	Part - Beta	uCi/cc*	STANDBY	+9.0E-11	
3	I-131	uCi/cc*	STANDBY	+2.5E-10	

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor

+1.00E-02

mR/hr

(R-32): "B" Steam Line Rad Monitor

+1.00E-02

mR/hr

Time: 0055

Message: 1

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room Shift Supervisor

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Make the following PA announcement after sounding the "Attention" signal:

"Attention, attention all personnel. The Ginna Nuclear Station is now starting its 1987 Emergency Preparedness Evaluated Exercise. All exercise messages must be started and ended with 'This is an exercise'." (Announce twice).

FOR CONTROLLER USE ONLY

Controller Notes:

Ensure that the PA announcement is made..

Actions Expected:



Time: 01:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0031	00900	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0030	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0330	03000	0320	0340	0072	0020	0064	00
WD 33B	0330	03010	0320	0340	0071	0021	0063	00
WD150A	0331	03100	0321	0341	0045	0022	0062	00
WD150B	0352	03000	0321	0341	0035	0023	0060	02
WD 250	0333	03000	0330	0343	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0650	00	TER33B	0650	00	TE150A	0670	
TE150B	0671	00	TE250A	0690	00	TE250B	0690	
DT150A	0000	00	DT150B	0000	00	DT250A	0040	
DT250B	0040	00						
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							

Time: 0115

Message: 2

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Indications in the Control Room include:

VCT level decreasing approximately 1% every 8 minutes.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) The RCS unidentified leak rate is stable at 1.25 gpm.

Actions Expected:

1987 EVALUATED EXERCISE

Time: 0115

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 508 MWE/1520 MWT
Reactor Shutdown Yes/No

NIS	N-41 <u>100%</u>	N-43 <u>100%</u>
NIS	N-42 <u>100%</u>	N-44 <u>100%</u>
RCS Pressure	<u>2235</u>	psig
RCS Temperature TAVG	<u>573</u>	oF
CHG. (FI-128)	<u>27</u>	GPM
Pressurizer Level	<u>49</u>	%
LTN. (FI-134)	<u>41</u>	GPM
Containment Pressure	<u>0</u>	psig
1A S/G Level	<u>52</u>	%
1B S/G Level	<u>51</u>	%
RVLIS	<u>100</u>	%
1A S/G Pressure	<u>750</u>	psig
1B S/G Pressure	<u>760</u>	psig
*CET	<u>602</u>	oF
Sump A Level	<u>2.2</u>	feet
Sump B Level	<u>0</u>	inches
A RCP	<u>Running/Stopped</u>	
B RCP	<u>Running/Stopped</u>	

High Head S. I. Pumps
FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps
FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 95 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Isolation Yes/No

Containment Recirc Fans
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses. Energized/Deenergized

480 V Buses Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

Service Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 55 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 21 feet

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0115

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
02	AREA 2-CONTAINMENT	2.1E+1	GOOD	HR/H
03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
04	AREA 4-CHARGING PUMP ROOM	1.6E+1	GOOD	HR/H
05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
07	AREA 7-INCORE INSTRUMENTATION	2.4E+1	GOOD	HR/H
08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
09	AREA 9-LETDOWN LINE	4.7E+1	GOOD	HR/H
10A	CONTAINMENT IODINE MONITOR R10A	1.2E+4	GOOD	CPH
10B	PLANT VENT IODINE MONITOR R10B	2.1E+2	GOOD	CPH
11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPH
12	CONTAINMENT GAS MONITOR	1.4E+5	HALM	CPH
13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+1	GOOD	CPH
14	AUX BLDG EXHAUST GAS MONITOR	7.1E+1	GOOD	CPH
15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPH
16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
VAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
VAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
T250	250 FOOT LEVEL TEMPERATURE	69.0	GOOD	DEGF
T033	33 FOOT LEVEL TEMPERATURE	66.0	GOOD	DEGF
D250	250 FOOT LEVEL WIND DIRECTION	332	GOOD	DEG.
D033	33 FOOT LEVEL WIND DIRECTION	333	GOOD	DEG.
S250	250 FOOT LEVEL WIND SPEED	3.2	GOOD	MPH
S033	33 FOOT LEVEL WIND SPEED	3.3	GOOD	MPH

SPING MONITOR SHEETS

Time: 0115

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	<u>STANDBY</u>	<u>+4.20E-04</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-1.90E+01</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>+2.30E-04</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.48E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>-5.0E-06</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-3.99E-02</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>-5.1E-06</u>	<u>-1.00E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>+3.98E-02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>	<u>-1.40E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>+9.00E-11</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>+2.40E-10</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr

Time: 01:15

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0031	00900	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0030	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0331	03000	0321	0341	0072	0020	0064	00
WD 33B	0331	03010	0320	0340	0071	0021	0063	00
WD150A	0332	03100	0320	0345	0045	0022	0062	00
WD150B	0332	03000	0315	0341	0035	0023	0060	02
WD 250	0333	03000	0321	0345	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0650	00	TER33B	0650	00	TE150A	0661	
TE150B	0661	00	TE250A	0690	00	TE250B	0690	
DT150A	0011	00	DT150B	0011	00	DT250A	0040	
DT250B	0040							
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							



Time: 0130

Message: 3

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Indications in the Control Room include:

VCT level decreasing approximately 1% every 8 minutes.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) The RCS unidentified leak rate is stable at 1.25 GPM.

Actions Expected:

- 1) An UNUSUAL EVENT should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification", EAL: Reactor Coolant Leakage; Primary system leakage greater than Tech. Spec. limits (greater than 1 gpm unidentified for more than 4 hours).
- 2) Implement SC-201, "UNUSUAL EVENT".
 - a) Make notifications.
 - b) Assess and monitor plant conditions. Update offsite agencies at least hourly and whenever there are significant changes in plant status.
- 3) Implement Procedure No. AP-RCS.1 "Reactor Coolant Leak".

1987 EVALUATED EXERCISE

Time: 0130MAJOR PARAMETERS

Reactor Power Level 508 MWE/1520MWT
 Reactor Shutdown Yes/No

NIS N-41 100% N-43 100%
 NIS N-42 100% N-44 100%

RCS Pressure 2235 psig
 RCS Temperature 573 °F
 CHG. (FI-128) 27 GPM
 Pressurizer Level 49 %
 LTN. (FI-134) 41 GPM
 Containment Pressure 0 psig
 1A S/G Level 52 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 750 psig
 1B S/G Pressure 760 psig
 *CET 602 °F
 Sump A Level 1.6 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 21 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 95 %

Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 55 psig

Component Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0130

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.1E+1	GOOD	MR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	1.6E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.5E+1	GOOD	MR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	4.7E+1	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.3E+4	GOOD	CPM
R10B	PLANT VENT IODINE MONITOR R10B	2.1E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.7E+5	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+1	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	7.1E+1	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	69.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	66.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	330	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	327	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	3.5	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	3.5	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0130

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	<u>CONTAINMENT</u>	<u>Current Reading</u>	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>+4.40E-04</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-1.90E+01</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>+3.70E-04</u>	N/A
4	Bkg. I	CPM	<u>STANDBY</u>	<u>+3.47E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>-5.1E-06</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-3.98E-02</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+5.1E-06</u>	<u>-1.00E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>+4.00E-02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30-03</u>	<u>-1.40E-03</u>

1	Part - Beta	uCi/cc*	STANDBY	<u>+9.00E-11</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>+2.50E-10</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr



Time: 1:30

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0031	00900	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0030	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT
WD 33A	0331	03000	0321	0351	0072	0020	0064
WD 33B	0330	03010	0322	0340	0071	0021	0063
WD150A	0330	03100	0321	0345	0045	0022	0062
WD150B	0331	03000	0321	0340	0035	0023	0060
WD 250	0332	03000	0310	0350	0055	0025	0061

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE
TER33A	0650	00	TER33B	0650	00	TE150A	0660
TE150B	0660	00	TE250A	0690	00	TE250B	0690
DT150A	0010	00	DT150B	0010		DT250A	0040
DT250B	0040						
DEW 33	0436		TEG 33	0602	00		
RAIN	0056						



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Time: 0145

Message: 4 X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room Shift Supervisor

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Declare an UNUSUAL EVENT in accordance with SC-100, "Ginna Station Event Evaluation and Classification", EAL: Reactor Coolant Leakage; Primary system leakage greater than Tech. Spec. limits (greater than 1 gpm unidentified for more than 4 hours).

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver if an UNUSUAL EVENT has not yet been declared. Do not deliver if emergency classification discussions are in progress.

Actions Expected:



Time: 0145

Message: 5

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

The Station experiences a large tremor from an earthquake.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) When Control Room decides to check the accelerograph, question the Operator to be sent as to where he is going and what he is looking for. After he answers, have him simulate finding a red target.
- 2) When Control Room personnel simulate PT-1 on Control Rods, inform them that Control Rods I-7 and G-9 will not move.
- 3) When Control Room checks turbine supervisory, inform them all conditions are normal.

Actions Expected:

- 1) Control Room personnel should start performing the actions of SC-5 (Earthquake Emergency Plan) including:
 - a) Checking the Station accelerograph.
 - b) After being told of the red target indicated, may update on Unusual Event notification due to earthquake at plant of greater than .01g as indicated by red target on action indicator at bottom of accelerograph.
 - c) Simulate starting the "A" emergency diesel generator.
 - d) Notify I&C personnel to remove the film from the accelerograph and send it to the photo lab.
 - e) Tour the plant for unusual conditions.
 - f) Simulate performing PT-1 (Rod Control System) operability test.

1987 EVALUATED EXERCISE

Time: 0145MAJOR PARAMETERS

Reactor Power Level 508 MWE/1520 MWT
 Reactor Shutdown Yes/No

NIS N-41 100% N-43 100%
 NIS N-42 100% N-44 100%

RCS Pressure 2235 psig
 RCS Temperature Tavg 573 °F
 CHG. (FI-128) 27 GPM
 Pressurizer Level 49 %
 LTN. (FI-134) 41 GPM
 Containment Pressure 0 psig
 1A S/G Level 52 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 750 psig
 1B S/G Pressure 760 psig
 *CET 602 °F
 Sump A Level 1.8 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 21 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 95 %Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

NaOH Tank Level = 93 %Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/ClosedService Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 55 psigComponent Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 51 %Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0145

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
001	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
002	AREA 2-CONTAINMENT	2.1E+1	GOOD	MR/H
003	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
004	AREA 4-CHARGING PUMP ROOM	1.6E+1	GOOD	MR/H
005	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
006	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
007	AREA 7-INCORE INSTRUMENTATION	2.5E+1	GOOD	MR/H
008	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
009	AREA 9-LETDOWN LINE	4.7E+1	GOOD	MR/H
10A	CONTAINMENT IODINE MONITOR R10A	1.5E+4	GOOD	CPM
10B	PLANT VENT IODINE MONITOR R10B	2.1E+2	GOOD	CPM
11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
12	CONTAINMENT GAS MONITOR	1.9E+5	HALM	CPM
13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+1	GOOD	CPM
14	AUX BLDG EXHAUST GAS MONITOR	7.1E+1	GOOD	CPM
15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPM
16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
VAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
VAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
T250	250 FOOT LEVEL TEMPERATURE	70.0	GOOD	DEGF
T033	33 FOOT LEVEL TEMPERATURE	67.0	GOOD	DEGF
D250	250 FOOT LEVEL WIND DIRECTION	330	GOOD	DEG.
D033	33 FOOT LEVEL WIND DIRECTION	330	GOOD	DEG.
S250	250 FOOT. LEVEL WIND SPEED	4.1	GOOD	MPH
S033	33 FOOT LEVEL WIND SPEED	4.2	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0145

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+4.60E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.70E-04		N/A	
4	Bkg I	CPM	STANDBY	+3.48E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	-5.20E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-3.99E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	-5.21E-06		-1.00E-06	
8	Gamma Bkg	CPM	STANDBY	-4.00E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.40E-03	

1	Part - Beta	uCi/cc*	STANDBY	+9.00E-11			
3	I-131	uCi/cc*	STANDBY	+2.50E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr

Time: 01:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0033	00800	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0042	01000	0022	0060	00
WS150B	0043	01100	0023	0061	02
WS 250	0032	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0330	03100	0320	0350	0072	0020	0064	00
WD 33B	0330	03020	0320	0340	0071	0021	0063	00
WD150A	0332	03100	0320	0340	0045	0022	0062	00
WD150B	0333	03000	0321	0341	0035	0023	0060	02
WD 250	0331	03000	0320	0342	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0670	00	TER33B	0670	00	TE150A	0691	
TE150B	0691	00	TE250A	0700	00	TE250B	0700	
DT150A	0021	00	DT150B	0021	00	DT250A	0030	
DT250B	0030							
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							

Time: 0200

Message: 6X

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Notify I&C to remove the film from the accelerograph and send it to the photo lab.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver if Control Room personnel have not requested I&C to remove film.

Actions Expected:

Time: 0200

Message: 7

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Indications in the Control Room include:

- o Containment recirculation fan cooler condensate collectors begin requiring dumping more frequently.

ALARMS Received in the Control Room:

- o E-31 (Containment Recirc. fan condensate Hi-Hi level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) This is the beginning of the earthquake induced crack on the "A" S/G steam line weld as it exits the S/G.

Actions Expected:

- 1) Control Room should try and determine if this new leak is from the primary or secondary side.
- 2) Shift Supervisor should initiate a containment entry to check for leakage.
- 3) Shift Supervisor orders the plant to hot shutdown in 6 hours per Technical Specification 3.10.4.4 (i.e. with two or more full length rods inoperable, be in hot shutdown within 6 hours).

1987 EVALUATED EXERCISE

Time: 0200MAJOR PARAMETERS

Reactor Power Level 508 MWE/1520MWT
 Reactor Shutdown Yes/No

NIS	N-41 <u>100%</u>	N-43 <u>100%</u>
NIS	N-42 <u>100%</u>	N-44 <u>100%</u>
RCS Pressure	<u>22.35</u>	psig
RCS Temperature Avg	<u>572.5</u>	oF
CHG. (FI-128)	<u>27</u>	GPM
Pressurizer Level	<u>49.5</u>	%
LTN. (FI-134)	<u>41</u>	GPM
Containment Pressure	<u>0</u>	psig
1A S/G Level	<u>52</u>	%
1B S/G Level	<u>51</u>	%
RVLIS	<u>100</u>	%
1A S/G Pressure	<u>750</u>	psig
1B S/G Pressure	<u>760</u>	psig
*CET	<u>602</u>	oF
Sump A Level	<u>2.0</u>	feet
Sump B Level	<u>0</u>	inches
A RCP	<u>Running/Stopped</u>	
B RCP	<u>Running/Stopped</u>	

Containment Isolation Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS

Turb. Driven

CST Level

InServ/STBY/OOS21.5 feetENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924 0 GPMFI-925 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 95 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 93 %Containment Recirc Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 55 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0200

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.2E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.6E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.6E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	4.7E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.6E+4	GOOD	CPM
R10B	PLANT VENT IODINE MONITOR R10B	2.1E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
R12	CONTAINMENT GAS MONITOR	2.2E+5	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+1	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	7.1E+1	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	70.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	67.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	330	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	330	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	4.5	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	4.4	GOOD	MPH



SPING MONITOR SHEETS

Time: 0200

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+4.80E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.70E-04		N/A	
4	Bkg I	CPM	STANDBY	+3.49E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	-5.30E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-4.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	-5.22E-06		-1.00E-06	
8	Gamma Bkg	CPM	STANDBY	-4.00E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.40E-03	
1	Part - Beta	uCi/cc*	STANDBY	+9.90E-11			
3	I-131	uCi/cc*	STANDBY	+3.00E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 02:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0042	00800	0011	0050	00
WS 33B	0042	00810	0012	0052	00
WS150A	0050	01000	0022	0060	00
WS150B	0052	01100	0023	0061	02
WS 250	0040	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0320	03000	0310	0330	0072	0020	0064	00
WD 33B	0320	03010	0315	0335	0071	0021	0063	00
WD150A	0330	03100	0320	0340	0045	0022	0062	00
WD150B	0330	03000	0320	0340	0035	0023	0060	02
WD 250	0330	03000	0320	0345	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0670	00	TER33B	0670	00	TE150A	0690	
TE150B	0690	00	TE250A	0700	00	TE250B	0700	
DT150A	0020	00	DT150B	0020	00	DT250A	0030	
DT250B	0030	00						
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							

Time: 0210

Message: 8

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Alarms received in the Control Room:

- o Fire zone S-03 (Auxiliary Building Intermediate Floor Center
- Bus 16 Area) first alarm.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) This is the beginning of a fire in the #16 Bus transformer due to earthquake damage to the windings.

Actions Expected:

- 1) Control Room sounds the fire alarm and activates the Fire Brigade.



Time: 0215

Message: 9

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Data reflects the "A" diesel generator running.
- 2) Data reflects a controlled shutdown of the plant.

Actions Expected:



1987 EVALUATED EXERCISE

Time: 0215MAJOR PARAMETERS

Reactor Power Level 503 MWE/1504 MWT
 Reactor Shutdown. Yes/No

NIS N-41 99% N-43 99%
 NIS N-42 99% N-44 99%

RCS Pressure 2240 psig
 RCS Temperature 572.5 °F
 CHG. (FI-128) 27 GPM
 Pressurizer Level 48 %
 LTN. (FI-134) 41 GPM
 Containment Pressure 0 psig
 1A S/G Level 52 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 755 psig
 1B S/G Pressure 765 psig
 *CET 601 °F
 Sump A Level 2.2 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS

Turb. Driven

CST Level

InServ/STBY/OOS
21.5 feetENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924 0 GPMFI-925 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 95 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 93 %Containment Recirc Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 55 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0215

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.3E+1	GOOD	MR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	1.6E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.7E+1	GOOD	MR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.9E+4	GOOD	CPM
R10B	PLANT VENT IODINE MONITOR R10B	2.3E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
R12	CONTAINMENT GAS MONITOR	2.5E+5	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+1	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	1.4E+2	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	70.1	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	67.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	330	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	331	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	4.3	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	4.2	GOOD	MPH



(2)

SPING MONITOR SHEETS

Time: 0215

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	<u>STANDBY</u>	<u>+4.80E-04</u>		N/A	
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-1.90E+01</u>		N/A	
3	I-131	uCi	<u>STANDBY</u>	<u>+3.90E-04</u>		N/A	
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.49E+01</u>		N/A	
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>-8.00E-06</u>		<u>3.70E-06</u>	
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-4.01E-02</u>		<u>1.00E-03</u>	
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>-7.99E-06</u>		<u>-1.00E-06</u>	
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>-4.10E-02</u>		<u>1.00E+01</u>	
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>		<u>-1.40E-03</u>	
1	Part - Beta	uCi/cc*	STANDBY	<u>+1.50E-10</u>			
3	I-131	uCi/cc*	STANDBY	<u>+3.00E-10</u>			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr

Time: 02:15

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0041	00900	0011	0050	00
WS 33B	0034	00910	0012	0052	00
WS150A	0046	01000	0022	0060	00
WS150B	0045	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0330	03000	0320	0340	0072	0020	0064	00
WD 33B	0331	03010	0321	0345	0071	0021	0063	00
WD150A	0330	03100	0315	0345	0045	0022	0062	00
WD150B	0331	03000	0316	0341	0035	0023	0060	02
WD 250	0332	03000	0317	0340	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0670	00	TER33B	0670	00	TE150A	0691	
TE150B	0690	00	TE250A	0702	00	TE250B	0701	
DT150A	0200	00	DT150B	0020	00	DT250A	0032	
DT250B	0031							
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							



Time: 0220

Message: 10X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Fire Brigade Captain

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

480 volt Bus #16 transformer is smoking, but no flames are visible.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) If off-site Fire Fighting assistance is requested, Controllers will intercede to prevent off-site Fire Department response.
- 2) See attached map for details of fire. Provide information verbally when the appropriate investigations are made by the Fire Brigade (when it arrives).

Actions Expected:

- 1) When notified, the Shift Supervisor should direct the Fire Brigade to respond via the plant PA System.

Time: 0220

Message: 10X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Fire Brigade Captain

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

480 volt Bus #16 transformer is smoking, but no flames are visible.

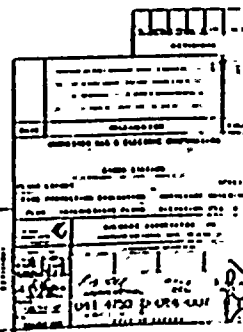
FOR CONTROLLER USE ONLY.

Controller Notes:

- 1) If off-site Fire Fighting assistance is requested, Controllers will intercede to prevent off-site Fire Department response.
- 2) See attached map for details of fire. Provide information verbally when the appropriate investigations are made by the Fire Brigade (when it arrives).

Actions Expected:

- 1) Fire Brigade Captain to direct proper fire fighting activities on Bus #16 transformer fire.
- 2) Fire Brigade Captain should keep Control Room advised of fire fighting progress.



REFERENCE
D-024-061

Smoldering
Fire



Time: 0225

Message: 11

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

ALARMS received in the Control Room:

- o L-7 (Bus 16 under voltage safeguards)
- o J-29 (480V transformer breaker trip)
- o J-7 (480V main or tie breaker trip)

Indications in the Control Room include:

- 1B Emergency Diesel Generator voltage meter indicates 480 volts.
- 1B Emergency Diesel Generator Bus 16 tie breaker closed.
- 1B Emergency Diesel Generator KW meter indicates ~ 200 KW.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) 480 volt Bus 16 tripped out because of a fault on the transformer due to the earthquake and subsequent fire.

Actions Expected:

- 1) After 1B Emergency Diesel Generator starts and ties onto Bus 16, Operations should restore equipment lost when Bus 16, tripped out.
- 2) An ALERT should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Fire; Fire potentially affecting safety systems as determined by the Shift Supervisor.
- 3) Implement SC-202, "ALERT":
 - a) Make notifications.
 - b) Assess and monitor plant conditions. Update off-site agencies at least every 30 minutes and whenever there are significant changes in plant status.
 - c) Activate the TSC, OSC, SC.



Time: 0230Message: 12GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***

Alarms received in Control Room:

- o E-31. (Containment Recirc. Fan condensate Hi-Hi level)

FOR CONTROLLER USE ONLYController Notes:

- 1) Fire Brigade fighting Bus #16 transformer fire.
- 2) Data reflects a controlled shutdown of the plant.

Actions Expected:

1987 EVALUATED EXERCISE

Time: 0230

MAJOR PARAMETERS

Reactor Power Level 477 MWE/1428 MWT
Reactor Shutdown Yes/No

NIS	N-41	<u>94%</u>	N-43	<u>94%</u>
NIS	N-42	<u>94%</u>	N-44	<u>94%</u>
RCS Pressure		<u>2235</u>		psig
RCS Temperature <u>Tavg</u>		<u>571.5</u>		oF
CHG. (FI-128)		<u>27</u>		GPM
Pressurizer Level		<u>46</u>		%
LTN. (FI-134)		<u>41</u>		GPM
Containment Pressure		<u>0</u>		psig
1A S/G Level		<u>52</u>		%
1B S/G Level		<u>51</u>		%
RVLIS		<u>100</u>		%
1A S/G Pressure		<u>770</u>		psig
1B S/G Pressure		<u>780</u>		psig
*CET		<u>598</u>		oF
Sump A Level		<u>1.6</u>		feet
Sump B Level		<u>0</u>		inches
A RCP		<u>Running/Stopped</u>		
B RCP		<u>Running/Stopped</u>		

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS
Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 21 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 95 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 52 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0230

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.3E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.8E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	2.2E+4	GOOD	CPH
R10B	PLANT VENT IODINE MONITOR R10B	3.0E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPH
R12	CONTAINMENT GAS MONITOR	2.7E+5	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	3.6E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	1.5E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	71.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	67.1	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	331	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	332	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	2.4	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	2.1	GOOD	MPH



SPING MONITOR SHEETS

Time: 0230

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+5.00E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.90E-04		N/A	
4	Bkg I	CPM	STANDBY	+3.48E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	-8.00E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-4.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	-8.00E-06		-1.00E-06	
8	Gamma Bkg	CPM	STANDBY	-4.10E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.40E-03	
1	Part - Beta	uCi/cc*	STANDBY	+4.00E-10			
3	I-131	uCi/cc*	STANDBY	+3.00E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr

Time: 02:30

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0021	00900	0012	0040	00
WS 33B	0022	00910	0012	0052	00
WS150A	0030	01000	0022	0060	00
WS150B	0032	01100	0023	0061	02
WS 250	0040	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0330	03000	0325	0345	0072	0020	0064	00
WD 33B	0330	03010	0315	0340	0071	0021	0063	00
WD150A	0330	03100	0320	0341	0045	0022	0062	00
WD150B	0330	03000	0321	0338	0035	0023	0060	02
WD 250	0335	03000	0325	0340	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0671	00	TER33B	0671	00	TE150A	0691	
TE150B	0691	00	TE250A	0710	00	TE250B	0710	
DT150A	0020	00	DT150B	0020	00	DT250A	0040	
DT250B	0040							
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							



Time: 0240

Message: 13X

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Fire Brigade Captain

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

The fire is extinguished.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver when all objectives for the fire have been demonstrated. Deliver before 0255 at the latest.

Actions Expected:

- 1) Notify the Control Room/TSC.
- 2) Re-stow all gear.



Time: 0240

Message: 14X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room Shift Supervisor

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Declare and ALERT in accordance with SC-100 "Ginna Station Event Evaluation and Classification," EAL: Fire; Fire potentially affecting safety systems as determined by the Shift Supervisor.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver only if an ALERT has not yet been declared. Do not deliver if Emergency Classification discussions are in progress..

Actions Expected:

Time: 0245

Message: 15

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Data reflects a controlled shutdown of the plant.

Actions Expected:



1987 EVALUATED EXERCISE

Time: 0245

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 452 MWE/1353MWT
Reactor Shutdown. Yes/No

NIS N-41 89% N-43 89%
NIS N-42 89% N-44 89%

RCS Pressure 2245 psig
RCS Temperature 570 °F
CHG. (FI-128) 27 GPM
Pressurizer Level 45 %
LTN. (FI-134) 41 GPM
Containment Pressure 0 psig
1A S/G Level 52 %
1B S/G Level 51 %
RVLIS 100 %
1A S/G Pressure 783 psig
1B S/G Pressure 790 psig
*CET 595 °F
Sump A Level 1.8 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

High Head S. I. Pumps
FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 53 %

Low Head S. I. Pumps
FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 95 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Isolation Yes/No

Containment Recirc Fans
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

Service Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 52 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 2 feet

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0245

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.4E+1	GOOD	MR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.8E+1	GOOD	MR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	2.5E+4	GOOD	CPH
R10B	PLANT VENT IODINE MONITOR R10B	3.5E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALH	CPH
R12	CONTAINMENT GAS MONITOR	2.9E+5	HALH	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	2.9E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	3.0E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
JT250	250 FOOT LEVEL TEMPERATURE	70.5	GOOD	DEGF
JT033	33 FOOT LEVEL TEMPERATURE	68.0	GOOD	DEGF
JD250	250 FOOT LEVEL WIND DIRECTION	332	GOOD	DEG.
JD033	33 FOOT LEVEL WIND DIRECTION	333	GOOD	DEG.
JS250	250 FOOT LEVEL WIND SPEED	3.5	GOOD	MPH
JS033	33 FOOT LEVEL WIND SPEED	3.6	GOOD	MPH



SPING MONITOR SHEETS

Time: 0245

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+5.20E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.90E-04		N/A	
4	Bkg I	CPM	STANDBY	3.48E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	+8.00E-06		3.70E-06	
6	Area Monitor	MR/H	1.0E-01	-4.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	-8.00E-06		-1.00E-06	
8	Gamma Bkg	CPM	STANDBY	-4.10E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.40E-03	
1	Part - Beta	uCi/cc*	STANDBY	+5.00E-10			
3	I-131	uCi/cc*	STANDBY	+3.20E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor

+1.00E-02

mR/hr

(R-32): "B" Steam Line Rad Monitor

+1.00E-02

mR/hr



Time: 02:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0031	00900	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0030	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0331	03000	0310	0340	0072	0020	0064	00
WD 33B	0332	03010	0320	0340	0071	0021	0063	00
WD150A	0330	03100	0320	0340	0045	0022	0062	00
WD150B	0310	03000	0300	0320	0035	0023	0060	02
WD 250	0315	03000	0305	0325	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0680	00	TER33B	0680	00	TE150A	0700	
TE150B	0700	00	TE250A	0705	00	TE250B	0705	
DT150A	0200	00	DT150B	0020	00	DT250A	0025	
DT250B	0025							
DEW 33	0436		TEG 33	0602	00			
RAIN	0056							



Time: 0300Message: 16GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***

Alarms received in Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLYController Notes:

- 1) ...Data reflects a controlled shutdown to hot shutdown.

Actions Expected:



1987 EVALUATED EXERCISE

Time: 0300MAJOR PARAMETERS

Reactor Power Level 427 MWE/1277 MWT
 Reactor Shutdown Yes/No

NIS N-41 84% N-43 84%
 NIS N-42 84% N-44 84%

RCS Pressure 2240 psig
 RCS Temperature 569 °F
 CHG. (FI-128) 27 GPM
 Pressurizer Level 44 %
 LTN. (FI-134) 41 GPM
 Containment Pressure 0.1 psig
 1A S/G Level 52 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 795 psig
 1B S/G Pressure 800 psig
 *CET 593 °F
 Sump A Level 2.0 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS
 A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS
Aux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 21 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps
 FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps
 FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 95 %
Containment Spray Pumps
 FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 NaOH Tank Level = 93 %

Containment Recirc Fans
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 PostAccident Dampers Open/Closed

Service Water Pumps
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 A&B Header Pressure 52 psig
Component Cooling Water Pumps
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0300

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.4E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.8E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	2.8E+4	GOOD	CPH
R10B	PLANT VENT IODINE MONITOR R10B	4.0E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.5E+5	HALM	CPH
R12	CONTAINMENT GAS MONITOR	3.3E+5	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	5.5E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	4.3E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.0E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	72.1	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	69.1	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	335	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	335	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	3.7	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	3.8	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0300

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+5.40E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.90E-04		N/A	
4	Bkg. I	CPM	STANDBY	+3.49E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	+8.00E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-4.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	+8.00E-06		1.50E-06	
8	Gamma Bkg	CPM	STANDBY	-4.10E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.40E-03	
1	Part - Beta	uCi/cc*	STANDBY	+6.00E-10			
3	I-131	uCi/cc*	STANDBY	+3.2E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 03:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I				
WS 33A	0038	00700	0015	0058	00				
WS 33B	0039	00910	0012	0052	00				
WS150A	0047	01000	0022	0060	00				
WS150B	0048	01100	0023	0061	02				
WS 250	0056	01000	0010	0055	00				
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I	
WD 33A	0335	06000	0325	0345	0072	0020	0064	00	
WD 33B	0335	03010	0325	0345	0071	0021	0063	00	
WD150A	0334	03100	0324	0344	0045	0022	0062	00	
WD150B	0333	03000	0323	0343	0035	0023	0060	02	
WD 250	0335	02000	0325	0345	0055	0025	0061	00	
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I	
TER33A	0691	00	TER33B	0691	00	TE150A	0701		
TE150B	0701	00	TE250A	0712	00	TE250B	0712		
DT150A	0200	00	DT150B	0200	00	DT250A	0020		
DT250B	0020								
DEW 33	0436		TEG 33	0602	00				
RAIN	0056								

Time: 0315Message: 17GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***

Alarms received in the Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLYController Notes:

- 1) ---Data reflects a controlled shutdown to hot shutdown.

Actions Expected:

1987 EVALUATED EXERCISE

Time: 0315

MAJOR PARAMETERS

Reactor Power Level 401 MWE/1200 MWT
Reactor Shutdown Yes/No

NIS. N-41 79% N-43 79%
NIS. N-42 79% N-44 79%

RCS Pressure 2240 psig
RCS Temperature 567 °F
CHG. (FI-128) 27 GPM
Pressurizer Level 43 %
LTN. (FI-134) 41 GPM
Containment Pressure 0.1 psig
1A S/G Level 52 %
1B S/G Level 51 %
RVLIS 100 %
1A S/G Pressure 805 psig
1B S/G Pressure 810 psig
*CET 590 °F
Sump A Level 2.2 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 21 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 95 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 52 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0315

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.4E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.8E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	3.3E+4	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	4.5E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.5E+5	HALM	CPH
R12	CONTAINMENT GAS MONITOR	3.5E+5	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	6.4E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	4.3E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	72.3	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	69.5	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	335	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	335	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	4.1	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	4.5	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0315

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	<u>CONTAINMENT</u>	<u>Current Reading</u>	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>+5.60E-04</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-1.90E+01</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>+3.90E-04</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.49E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>+8.00E-06</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-4.00E-02</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+8.00E-06</u>	<u>-1.00E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>-4.10E-02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>	<u>-1.40E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>+7.00E-10</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>+3.50E-10</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr



Time: 03:15

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0051	00900	0011	0050	00
WS 33B	0052	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0335	03000	0325	0345	0072	0020	0064	00
WD 33B	0335	03010	0325	0344	0071	0021	0063	00
WD150A	0334	03100	0324	0345	0045	0022	0062	00
WD150B	0333	03000	0323	0342	0035	0023	0060	02
WD 250	0335	03000	0325	0342	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0700	00	TER33B	0700	00	TE150A	0715	
TE150B	0715	00	TE250A	0725	00	TE250B	0725	
DT150A	0015	00	DT150B	0015	00	DT250A	0025	
DT250B	0025							
DEW 33	0456		TEG 33	0602	00			
RAIN	0056							



Time: 0330

Message: 18

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR: CONTROLLER USE ONLY

Controller Notes:

- 1) Data reflects a controlled shutdown to hot shutdown.

Actions Expected:



1987 EVALUATED EXERCISE

Time: 0330MAJOR PARAMETERS

Reactor Power Level 376 MWE/1125 MWT
 Reactor Shutdown Yes/No

NIS N-41 74% N-43 74%
 NIS N-42 74% N-44 74%

RCS Pressure 2240 psig
 RCS Temperature 566 Avg of
 CHG. (FI-128) 27 GPM
 Pressurizer Level 41 %
 LTN. (FI-134) 41 GPM
 Containment Pressure 0.1 psig
 1A S/G Level 52 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 820 psig
 1B S/G Pressure 825 psig
 *CET 587 of
 Sump A Level 1.6 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 21.5 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 53 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 95 %

Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 52 psig

Component Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0330

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.4E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.9E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	3.8E+4	HALH	CPH
R10B	PLANT VENT IODINE MONITOR R10B	5.0E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALH	CPH
R12	CONTAINMENT GAS MONITOR	3.8E+5	HALH	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	7.3E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	4.3E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	72.5	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	69.5	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	337	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	335	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	4.6	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	4.7	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0330

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>+5.80E-04</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-1.90E+01</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>+3.90E-04</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.49E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>+1.00E-06</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-4.00E-02</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>-1.00E-06</u>	<u>-1.00E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>-4.10E-02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>	<u>-1.40E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>+9.00E-10</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>+3.70E-10</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr

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METEOROLOGICAL DATA

NAME	AVGE	ST. DEV	MIN.	MAX.	I				
WS 33A	0046	00900	0015	0050	00				
WS 33B	0045	00810	0016	0052	00				
WS150A	0041	01000	0022	0060	00				
WS150B	0042	01100	0023	0061	02				
WS 250	0060	01000	0010	0055	00				
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I	
WD 33A	0337	02000	0327	0347	0072	0020	0064	00	
WD 33B	0336	03010	0326	0346	0071	0021	0063	00	
WD150A	0332	03100	0323	0343	0045	0022	0062	00	
WD150B	0337	03000	0327	0347	0035	0023	0060	02	
WD 250	0338	03000	0328	0348	0055	0025	0061	00	
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I	
TER33A	0695	00	TER33B	0695	00	TE150A	0715		
TE150B	0715	00	TE250A	0725	00	TE250B	0725		
DT150A	0200	00	DT150B	0200	00	DT250A	0030		
DT250B	0030								
DEW 33	0460		TEG 33	0602	00				
RAIN	0056								

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Time: 0345

Message: 19

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) ----The TSC, OSC and Emergency Survey Center should be nearing operational status.
- 2) Data reflects a controlled shutdown to hot shutdown.

Actions Expected:

- 1) TSC, when operational should send a repair team out to investigate 480 volt Bus #16 transformer damage.

1987 EVALUATED EXERCISE

Time: 0345

MAJOR PARAMETERS

Reactor Power Level 350 MWE/1048 MWT
 Reactor Shutdown Yes/No

NIS N-41 69% N-43 69%
 NIS N-42 69% N-44 69%

RCS Pressure 2235 psig
 RCS Temperature 565 °F
 CHG. (FI-128) 27 GPM
 Pressurizer Level 40 %
 LTN. (FI-134) 41 GPM
 Containment Pressure 0.1 psig
 1A S/G Level 52 %
 1B S/G Level 52 %
 RVLIS 100 %
 1A S/G Pressure 830 psig
 1B S/G Pressure 835 psig
 *CET 585 °F
 Sump A Level 1.8 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 21.5 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 53 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 RWST Level = 95 %

Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 A&B Header Pressure 52 psig
Component Cooling Water Pumps
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0345

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.4E+1	GOOD	MR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.9E+1	GOOD	MR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	4.2E+4	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	5.5E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPH
R12	CONTAINMENT GAS MONITOR	4.1E+5	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	8.2E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	4.3E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	72.6	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	69.7	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	339	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	337	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	5.1	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	5.2	GOOD	MPH



SPING MONITOR SHEETS

Time: 0345

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+6.00E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.90E-04		N/A	
4	Bkg I	CPM	STANDBY	+3.49E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	+1.00E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-4.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	-1.00E-06		-1.00E-06	
8	Gamma Bkg	CPM	STANDBY	-4.10E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.40E-03	
1	Part - Beta	uCi/cc*	STANDBY	+1.00E-09			
3	I-131	uCi/cc*	STANDBY	+3.70E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor +1.00E-02 mR/hr

(R-32): "B" Steam Line Rad Monitor +1.00E-02 mR/hr

Time: 03:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0031	00900	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0030	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0339	03000	0329	0349	0072	0020	0064	00
WD 33B	0338	03010	0328	0348	0071	0021	0063	00
WD150A	0336	03100	0326	0346	0045	0022	0062	00
WD150B	0335	03000	0325	0345	0035	0023	0060	02
WD 250	0337	03000	0327	0347	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0697	00	TER33B	0698	00	TE150A	0707	
TE150B	0707	00	TE250A	0718	00	TE250B	0718	
DT150A	0010	00	DT150B	0010	00	DT250A	0021	
DT250B	0021	00						
DEW 33	0460		TEG 33	0602				
RAIN	0056							



Time: 0400

Message: 20

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets.

Message: ***THIS IS AN EXERCISE***

ALARMS received in the Control Room:

- o J-9 (Safeguard breaker trip)
- o J-32 (Emergency Diesel Generator 1B panel)
- o L-7 (Bus 16 under voltage safeguards)

Indications in the Control Room include:

- o 1B Emergency Diesel Generator Bus tie to 16 shows a green light.
- o No voltage or KW's on 1B Emergency Diesel Generator. Equipment off of 480 volt Bus 16 not running.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Local "B" Emergency Diesel Generator Panel indicates Diesel tripped on low bearing oil pressure.
- 2) Major equipment lost with loss of Bus #16 - MCC-1D, MCC-1J, MCC-1M, 1BMDAFWP, 1B & 1C charging pumps, 1B CCW pump, 1B & 1C CV recirculation fans, 1B CV spray pump, 1B RHR pump, 1B SI pump and 1D standby auxiliary feedwater pump.
- 3) TSC should send repair team out to check out 1B Emergency Diesel Generator

Actions Expected:

- 1) Operators should switch over to excess letdown because of only one charging pump available.
- 2) TSC should send repair team out to check out 1B Emergency Diesel Generator.



1987 EVALUATED EXERCISE

Time: 0400

MAJOR PARAMETERS

Reactor Power Level 325 MWE/ 973 MWT
Reactor Shutdown Yes/No

NIS N-41 6420 N-43 6420
NIS N-42 6420 N-44 6420

RCS Pressure 22.35 psig
RCS Temperature 563 °F
CHG. (FI-128) 27 GPM
Pressurizer Level 38 %
LTN. (FI-134) 47 GPM
Containment Pressure 0.1 psig
1A S/G Level 52 %
1B S/G Level 53 %
RVLIS 100 %
1A S/G Pressure 845 psig
1B S/G Pressure 850 psig
*CET 581 °F
Sump A Level 2.0 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses 13,14,15,17,18 16 Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 2 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924. 0 GPM
FI-925. 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 95 %
Containment Spray Pumps
FI-931A. 0 GPM
FI-931B. 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 52 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES AVERAGE

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0400

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.4E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.7E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.9E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	4.7E+4	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	6.0E+2	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPH
R12	CONTAINMENT GAS MONITOR	4.4E+5	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	9.1E+2	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	4.3E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+2	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	73.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	70.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	340	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	340	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	5.2	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	5.5	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0400

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	+6.20E-04	N/A
2	Part - Alpha	CPM	STANDBY	-1.90E+01	N/A
3	I-131	uCi	STANDBY	+3.90E-04	N/A
4	Bkg I	CPM	STANDBY	+3.49E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	+2.00E-06	3.70E-06
6	Area Monitor	MR/H	1.00E-01	-4.00E-02	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	-2.00E-06	-1.50E-06
8	Gamma Bkg	CPM	STANDBY	-4.10E-02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03	-1.45E-03
1	Part - Beta	uCi/cc*	STANDBY	+1.00E-09	_____
3	I-131	uCi/cc*	STANDBY	+3.80E-10	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor

+1.00E-02

mR/hr

(R-32): "B" Steam Line Rad Monitor

+1.00E-02

mR/hr

Time: 04:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0055	00700	0015	0050	00
WS 33B	0052	00910	0012	0052	00
WS150A	0055	01000	0022	0060	00
WS150B	0056	01100	0023	0061	02
WS 250	0052	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0340	02000	0330	0350	0072	0020	0064	00
WD 33B	0340	03010	0330	0350	0071	0021	0063	00
WD150A	0341	03100	0331	0351	0045	0022	0062	00
WD150B	0342	03000	0332	0352	0035	0023	0060	02
WD 250	0340	03000	0330	0350	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0700	00	TER33B	0700	00	TE150A	0720	
TE150B	0720	00	TE250A	0730	00	TE250B	0730	
DT150A	0200	00	DT150B	0020	00	DT250A	0030	
DT250B	0030							
DEW 33	0470		TEG 33	0602	00			
RAIN	0057							



Time: 0400

Message: 21X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: . OSC Team Investigating Loss of #16 Station Service Transformer

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

The transformer has phase to phase grounds and must be replaced.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver verbally when the team has made appropriate investigations.

Actions Expected:

- 1) Notify Control Room/OSC and estimate repair effort.



Time: 0405

Message: 21.5X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: JENC Manager

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Radio Station WZZZ called to report this news bulletin received from the Associated Press:

"The U.S. Geological Survey Office in Golden, Colorado this morning reported an earthquake in Upstate New York that occurred at approximately 1:45 a.m. EST. The earthquake registered 5.0 on the Richter Scale. The earthquake's epicenter was located approximately 30 miles east of Rochester, New York.

Preliminary reports from local police and governmental agencies indicate light to moderate damage to residential and commercial structures in the affected area. Roadways and bridges are reported passable. No major injuries or fatalities have been reported at this time."

FOR CONTROLLER USE ONLY

Controller Notes:

ACTIONS EXPECTED:



Time: 0415

Message: 22

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in the Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) If the TSC decides to cross-tie Buses 14-16, inform them that the breaker tie on Bus 16 will not close.

ACTIONS EXPECTED:

- 1) A SITE EMERGENCY should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Fire causing loss of safety systems including redundant components as determined by the Shift Supervisor; (i.e. Loss of both containment spray pumps), or EAL: Events in progress or have occurred which involves actual or likely major failures of plant functions needed for protection of the public.
- 2) Implement SC-203, "SITE EMERGENCY":
 - A. Make notifications
 - B. Assess and monitor plant conditions. Update offsite agencies at least every 30 minutes and whenever there are significant changes in plant status.
 - C. Activate the EOF, JENC, and Engineering Support Center.
- 3) Implement SC-212 "Site Evacuation", and SC-213 "Accountability."
- 4) TSC may send a repair team out to checkout and repair the breaker between the 14 - 16 Buses.
- 5) TSC should be working on leakage problem in containment.
- 6) Operations takes out normal letdown and puts in excess letdown because of only one charging pump operating due to Bus 16 outage.



1987 EVALUATED EXERCISE

Time: 0415

MAJOR PARAMETERS

Reactor Power Level 300 MWE/896 MWT
Reactor Shutdown Yes/No

NIS N-41 59% N-43 59%
NIS N-42 59% N-44 59%

RCS Pressure 2240 psig
RCS Temperature 562 °F
CHG. (FI-128) 0 GPM
Pressurizer Level 37 %
LTN. (FI-134) excess LTON. IN service GPM
Containment Pressure 0.2 psig
1A S/G Level 52 %
1B S/G Level 52 %
RVLIS 100 %
1A S/G Pressure 855 psig
1B S/G Pressure 860 psig
*CET 579 °F
Sump A Level 2.2 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses 13,14,15,17,18 16
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 20.5 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 95 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 55 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (AVERAGE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0415

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.5E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.8E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.9E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	5.3E+4	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	6.6E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
R12	CONTAINMENT GAS MONITOR	4.7E+5	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	9.1E+2	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	4.6E+2	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
IVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
IVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
IT250	250 FOOT LEVEL TEMPERATURE	73.0	GOOD	DEGF
IT033	33 FOOT LEVEL TEMPERATURE	70.0	GOOD	DEGF
ID250	250 FOOT LEVEL WIND DIRECTION	341	GOOD	DEG:
ID033	33 FOOT LEVEL WIND DIRECTION	340	GOOD	DEG.
IS250	250 FOOT LEVEL WIND SPEED	5.5	GOOD	MPH
IS033	33 FOOT LEVEL WIND SPEED	5.0	GOOD	MPH

SPING MONITOR SHEETS

Time: 0415

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+6.40E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.90E-04		N/A	
4	Bkg I	CPM	STANDBY	+3.49E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	+3.00E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-4.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	-2.00E-06		-3.00E-06	
8	Gamma Bkg	CPM	STANDBY	-4.10E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		1.45E-03	
1	Part - Beta	uCi/cc*	STANDBY	+1.20E-09			
3	I-131	uCi/cc*	STANDBY	+3.80E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 04:15

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0051	00900	0011	0050	00
WS 33B	0050	00910	0012	0052	00
WS150A	0055	01000	0022	0060	00
WS150B	0056	01100	0023	0061	02
WS 250	0055	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0340	02100	0330	0350	0072	0020	0064	00
WD 33B	0341	03010	0331	0351	0071	0021	0063	00
WD150A	0340	03100	0330	0350	0045	0022	0062	00
WD150B	0341	03000	0331	0351	0035	0023	0060	02
WD 250	0342	02000	0331	0351	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0700	00	TER33B	0700	00	TE150A	0722	00
DE150B	0722	00	TE250A	0733	00	TE250B	0733	00
DT150A	0022	00	DT150B	0022	00	DT250A	0033	00
DT250B	0033							
DEW 33	0470		TEG 33	0602	00			
RAIN	0057							

Time: 0430 to ~
0530

Message: 23X

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: OSC Team Investigating Loss of 1B Emergency Diesel Generator

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

The 1B Emergency Diesel Generator Lube Oil Pump has a cracked casing. Spare is available.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver verbally when the Team has made appropriate investigations.
- 2) Repairs cannot be successful until 0800 hours.

Actions Expected:

- 1) Notify Control Room/OSC and continue repair efforts.



123
Time: 0430

Message: 24

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Technical Support Center

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Results from developing of the accelerograph film indicates an earthquake of .24g has occurred.

Alarms received in Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

- 1) If not already declared, a SITE AREA EMERGENCY should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Natural Phenomenon Being Experienced; Plant not in cold shutdown and earthquake greater than .2g as determined by developing accelograph film.
- 2) Implement SC-203, "SITE AREA EMERGENCY"
 - A. Make notifications.
 - B. Assess and monitor plant conditions. Update off-site agencies at least every 30 minutes and whenever there are significant changes in plant status.
 - C. Activate the EOF, JENC, and Engineering Support Center.
- 3) Implement SC-212, "Site Evacuation" and SC-213, "Accountability."
- 4) TSC should be evaluating leakage problem in containment.

1987 EVALUATED EXERCISE

Time: 0430

MAJOR PARAMETERS

Reactor Power Level 274 MWE/ 820 MWT
Reactor Shutdown Yes/No

NIS	N-41 <u>54%</u>	N-43 <u>54%</u>
NIS	N-42 <u>54%</u>	N-44 <u>54%</u>
RCS Pressure	<u>2240</u>	psig
RCS Temperature <u>Tavg</u>	<u>561</u>	oF
CHG. (FI-128)	<u>0</u>	GPM
Pressurizer Level	<u>35</u>	%
LTN. (FI-134) excess LTON.	<u>IN Service</u>	GPM
Containment Pressure	<u>0.25</u>	psig
1A S/G Level	<u>53</u>	%
1B S/G Level	<u>52</u>	%
RVLIS	<u>100</u>	%
1A S/G Pressure	<u>870</u>	psig
1B S/G Pressure	<u>875</u>	psig
*CET	<u>576</u>	oF
Sump A Level	<u>1.8</u>	feet
Sump B Level	<u>0</u>	inches
A. RCP	<u>Running/Stopped</u>	
B. RCP	<u>Running/Stopped</u>	

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses 13,14,15,17,18 16 Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 21.5 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 95 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 55 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (AVERAGE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0430

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.5E+1	GOOD	HR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	1.8E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	3.0E+1	GOOD	HR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	5.8E+4	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	7.4E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
R12	CONTAINMENT GAS MONITOR	5.0E+5	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.1E+3	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	4.7E+2	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
IVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
IVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
IT250	250 FOOT LEVEL TEMPERATURE	73.1	GOOD	DEGF
IT033	33 FOOT LEVEL TEMPERATURE	70.1	GOOD	DEGF
ID250	250 FOOT LEVEL WIND DIRECTION	342	GOOD	DEG.
ID033	33 FOOT LEVEL WIND DIRECTION	340	GOOD	DEG.
IS250	250 FOOT LEVEL WIND SPEED	5.7	GOOD	MPH
S033	33 FOOT LEVEL WIND SPEED	5.2	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0430

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	+6.60E-04	N/A
2	Part - Alpha	CPM	STANDBY	-1.90E+01	N/A
3	I-131	uCi	STANDBY	+3.90E-04	N/A
4	Bkg I	CPM	STANDBY	+3.50E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	+3.00E-06	3.70E-06
6	Area Monitor	MR/H	1.00E-01	-4.00E-02	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	+3.00E-06	-1.50E-06
8	Gamma Bkg	CPM	STANDBY	-4.10E-02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03	-1.50E-03

1	Part - Beta	uCi/cc*	STANDBY	+1.20E-09	_____
3	I-131	uCi/cc*	STANDBY	+4.00E-10	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 04:30

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0051	00900	0011	0050	00
WS 33B	0056	00910	0012	0052	00
WS150A	0050	01000	0022	0060	00
WS150B	0052	01100	0023	0061	02
WS 250	0060	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0342	03000	0332	0352	0072	0020	0064	00
WD 33B	0341	03010	0331	0351	0071	0021	0063	00
WD150A	0341	03100	0331	0352	0045	0022	0062	00
WD150B	0341	03000	0331	0354	0035	0023	0060	02
WD 250	0342	03000	0332	0355	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0701	00	TER33B	0701	00	TE150A	0711	
TE150B	0712	00	TE250A	0731	00	TE250B	0731	
DT150A	0011	00	DT150B	0011	00	DT250A	0030	
DT250B	0030							
DEW 33	0475		TEG 33	0602	00			
RAIN	0058							

Time: 0445

Message: 25X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Emergency Coordinator

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

Declare a SITE AREA EMERGENCY in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Natural Phenomenom being Experienced; plant not in Cold Shutdown and earthquake greater than .2g as determined by developing accelograph film.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver if a SITE AREA EMERGENCY has not been declared. Do not deliver if emergency classification discussions are in progress.

Actions Expected:

Time: 0445

Message: 26

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in the Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Data reflects unit in a Controlled Shutdown.

Actions Expected:

- 1) TSC may send a Repair Team out to finish maintenance on the turbine driven auxiliary feedwater pump.



1987 EVALUATED EXERCISE

Time: 0445MAJOR PARAMETERS

Reactor Power Level 249 MWE/745 MWT
 Reactor Shutdown Yes/No

NIS. N-41 49% N-43 49%
 NIS. N-42 49% N-44 49%

RCS Pressure 2235 psig
 RCS Temperature 560 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 34 %
 LTN. (FI-134) excass LTN. in service GPM
 Containment Pressure 0.3 psig
 1A S/G Level 53 %
 1B S/G Level 52 %
 RVLIS 100 %
 1A S/G Pressure 880 psig
 1B S/G Pressure 885 psig
 *CET 574 °F
 Sump A Level 2.0 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized
 480 V Buses 13,14,15,17,18 Energized 16 Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 2.1 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 RWST Level = 95 %
Containment Spray Pumps
 FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 A&B Header Pressure 55 psig
Component Cooling Water Pumps
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (AVERAGE)

AREA RADIOLOGICAL AND METEOR DATA

TIME: 0445

INT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
1	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
2	AREA 2-CONTAINMENT	2.5E+1	GOOD	MR/H
3	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
4	AREA 4-CHARGING PUMP ROOM	1.8E+1	GOOD	MR/H
5	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
6	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
7	AREA 7-INCORE INSTRUMENTATION	3.0E+1	GOOD	MR/H
8	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
9	AREA 9-LETDOWN LINE	5.2E+1	GOOD	MR/H
0A	CONTAINMENT IODINE MONITOR R10A	6.5E+4	HALM	CPM
0B	PLANT VENT IODINE MONITOR R10B	8.1E+2	GOOD	CPM
1	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
2	CONTAINMENT GAS MONITOR	5.3E+5	HALM	CPM
3	AUX BLDG EXHAUST AIR PARTICULATE	1.4E+3	GOOD	CPM
4	AUX BLDG EXHAUST GAS MONITOR	4.9E+2	GOOD	CPM
5	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
6	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
7	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
8	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
9	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
0	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
9	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
0	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
3	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
4	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
5	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
6	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
7	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
8	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
AC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
AC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
250	250 FOOT LEVEL TEMPERATURE	73.2	GOOD	DEGF
33	33 FOOT LEVEL TEMPERATURE	70.2	GOOD	DEGF
250	250 FOOT LEVEL WIND DIRECTION	345	GOOD	DEG.
33	33 FOOT LEVEL WIND DIRECTION	345	GOOD	DEG.
250	250 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH
33	33 FOOT LEVEL WIND SPEED	6.2	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0445

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	+6.80E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+3.90E-04		N/A	
4	Bkg I	CPM	STANDBY	+3.50E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	+3.40E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-5.00E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	+3.40E-06		-1.50E-06	
8	Gamma Bkg	CPM	STANDBY	-4.20E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.50E-03	
1	Part - Beta	uCi/cc*	STANDBY	+2.00E-09			
3	I-131	uCi/cc*	STANDBY	+4.20E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr

Time: 04:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV.	MIN.	MAX.	I
WS 33A	0031	00900	0011	0050	00
WS 33B	0032	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0030	01000	0010	0055	00

NAME	AVGE	ST. DEV.	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0345	03000	0341	0350	0072	0020	0064	00
WD 33B	0342	03010	0330	0350	0071	0021	0063	00
WD150A	0341	03100	0331	0351	0045	0022	0062	00
WD150B	0344	03000	0340	0350	0035	0023	0060	02
WD 250	0346	03000	0330	0351	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0702	00	TER33B	0702	00	TE150A	0722	
TE150B	0722	00	TE250A	0725	00	TE250B	0725	
DT150A	0020	00	DT150B	0020	00	DT250A	0023	
DT250B	0023							
DEW 33	0475		TEG 33	0602	00			
RAIN	0059							

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Time: 0445

Message: 27x

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: OSC Team investigating Bus 14-16 Tie Breaker on
Bus 16 failure to close.

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

The Tie Breaker indicated physical damage and must be changed out.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver verbally when the team has made appropriate investigations.
- 2) Repairs cannot be successful until after 1130 hours.

Actions Expected:

- 1) Notify Control Room/OSC and continue repair efforts.



Time: 0445-0515

Message: 27.5x

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Emergency Coordinator

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

When accountability of site personnel is complete and non-essential people have been identified, the Emergency Coordinator should call the Wayne County EOC stating that ____ persons are to be evacuated from the site. He should request information on road conditions or traffic impediments and the acceptable routes. If transportation is required, he should request it at this time.

Deliver this message verbally if the Emergency Coordinator has not made this call within approximately 30 minutes of accountability.

Controller Notes:

TSC Controller should ensure that this call is completed even in the event that no personnel are to be evacuated.



Time: 0500

Message: 28X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: OSC Team sent out to finish maintenance on turbine driven auxiliary feedwater pump

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

The thrust bearing and thrust bearing cooler need to be installed plus line-up and coupling of pump and turbine.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver verbally when team has made appropriate investigations.
- 2) Repairs cannot be successful until after 1600 hours.

Actions Expected:

- 1) Notify Control Room/OSC and continue repair efforts if it is decided to do so.

Time: 0500

Message: 29

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Alarms received in the Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Data sheets reflect continuing reactor shutdown.

Actions Expected:



1987 EVALUATED EXERCISE

Time: 0500MAJOR PARAMETERS

Reactor Power Level 224 MWE/668 MWT
 Reactor Shutdown Yes/No

NIS. N-41 44% N-43 44%
 NIS. N-42 44% N-44 44%

RCS Pressure 2245 psig
 RCS Temperature 559 oF
 CHG. (FI-128) 0 GPM
 Pressurizer Level 33 %
 LTN. (FI-134) excess LTN. IN service GPM
 Containment Pressure 0.3 psig
 1A S/G Level 53 %
 1B S/G Level 52 %
 RVLIS 100 %
 1A S/G Pressure 895 psig
 1B S/G Pressure 900 psig
 *CET 572 oF
 Sump A Level 2.2 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized
 480 V Buses 13,14,15,17,18 Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 20 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 RWST Level = 95 %

Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 A&B Header Pressure 55 psig
Component Cooling Water Pumps
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (AVERAGE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0500

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.5E+1	GOOD	MR/H
R03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	1.8E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	3.0E+1	GOOD	MR/H
R08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	7.1E+4	HALH	CPM
R10B	PLANT VENT IODINE MONITOR R10B	8.6E+2	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	6.4E+5	HALH	CPM
R12	CONTAINMENT GAS MONITOR	5.5E+5	HALH	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.9E+3	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	5.0E+2	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
MT250	250 FOOT LEVEL TEMPERATURE	73.6	GOOD	DEGF
MT033	33 FOOT LEVEL TEMPERATURE	70.5	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	350	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	350	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.5	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.5	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0500

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	-7.00E-04	N/A
2	Part - Alpha	CPM	STANDBY	-1.90E+01	N/A
3	I-131	uCi	STANDBY	+3.90E-04	N/A
4	Bkg I	CPM	STANDBY	+3.50E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	-3.40E-06	3.70E-06
6	Area Monitor	MR/H	1.00E-01	-5.00E-02	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	+3.40E-06	-1.50E-06
8	Gamma Bkg	CPM	STANDBY	-4.20E-02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03	-1.50E-03
1	Part - Beta	uCi/cc*	STANDBY	+2.00E-09	
3	I-131	uCi/cc*	STANDBY	+4.20E-10	

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 05:00

'SILENT 700' COMPUTER
METEOROLOGICAL DATA

AV77									
NAME	AVGE	ST. DEV	MIN.	MAX.	I				
WS 33A	0061	00800	0021	0050	00				
WS 33B	0062	00910	0022	0052	00				
WS150A	0040	01000	0022	0060	00				
WS150B	0042	01100	0023	0061	02				
WS 250	0060	01000	0010	0075	00				
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I	
WD 33A	0350	03000	0340	0359	0072	0020	0064	00	
WD 33B	0351	03010	0340	0359	0071	0021	0063	00	
WD150A	0352	03100	0340	0000	0045	0022	0062	00	
WD150B	0352	03000	0339	0001	0035	0023	0060	02	
WD 250	0353	03000	0343	0002	0055	0025	0061	00	
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I	
TER33A	0705	00	TER33B	0705	00	TE150A	0725		
TE150B	0725	00	TE250A	0736	00	TE250B	0736		
DT150A	0020	00	DT150B	0020	00	DT250A	0031		
DT250B	0031								
DEW 33	0480		TEG 33	0602	00				
RAIN	0059								



Time: 0515

Message: 30

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

Indications in the Control Room:

- o The Containment Recirculation Fan Cooler condensate collectors on fans 1A and 1D are needing dumping more often.

Alarms received in the Control Room:

- o E-31 (Containment Recirc. Fan Condensate Hi-Hi Level)

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) The above message indicated that the "A" S/G weld crack is worsening.
- 2) The EOF, JENC, and Engineering Support Center should be nearing operational status.
- 3) Data sheets reflect continuing Reactor Shutdown.

Actions Expected:

1987 EVALUATED EXERCISE

Time: 0515MAJOR PARAMETERS

Reactor Power Level 198 MWE/593 MWT
 Reactor Shutdown Yes/NO

NIS N-41 392 N-43 392
 NIS N-42 392 N-44 392

RCS Pressure 2245 psig
 RCS Temperature 557 of
 CHG. (FI-128) 0 GPM
 Pressurizer Level 31 %
 LTN. (FI-134) excess LTN. in service GPM
 Containment Pressure 0.35 psig
 1A S/G Level 54 %
 1B S/G Level 52 %
 RVLIS 100 %
 1A S/G Pressure 895 psig
 1B S/G Pressure 910 psig
 *CET 568 of
 Sump A Level 20 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/NO

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized
 480 V Buses 13,14,15,17,18 Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 19.5 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 RWST Level = 95 %
Containment Spray Pumps
 FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS
 A&B Header Pressure 55 psig
Component Cooling Water Pumps
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (AVERAGE)

AREA RADIOLOGICAL AND METEOR DATA

TIME: 0515

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
02	AREA 2-CONTAINMENT	2.5E+1	GOOD	MR/H
03	AREA 3-RADIO CHEM LAB	1.9E-1	GOOD	MR/H
04	AREA 4-CHARGING PUMP ROOM	1.8E+1	GOOD	MR/H
05	AREA 5-SPENT FUEL PIT	5.0E+0	GOOD	MR/H
06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
07	AREA 7-INCORE INSTRUMENTATION	3.2E+1	GOOD	MR/H
08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
09	AREA 9-LETDOWN LINE	5.2E+1	GOOD	MR/H
0A	CONTAINMENT IODINE MONITOR R10A	7.9E+4	HALM	CPM
0B	PLANT VENT IODINE MONITOR R10B	1.0E+3	GOOD	CPM
1	CONTAINMENT AIR PARTICULATE	6.4E+5	HALM	CPM
2	CONTAINMENT GAS MONITOR	6.1E+5	HALM	CPM
3	AUX BLDG EXHAUST AIR PARTICULATE	2.3E+3	GOOD	CPM
4	AUX BLDG EXHAUST GAS MONITOR	5.3E+2	GOOD	CPM
5	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
6	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
7	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
8	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
9	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
0	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
9	AREA 29-CONTAINMENT HIGH RANGE	8.0E-1	GOOD	R/HR
0	AREA 30-CONTAINMENT HIGH RANGE	9.0E-1	GOOD	R/HR
3	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
4	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
5	AREA 35-PASS SAMPLE PANEL	1.0E-1	GOOD	MR/H
6	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
7	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
8	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
AC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
AC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
250	250 FOOT LEVEL TEMPERATURE	74.7	GOOD	DEGF
033	33 FOOT LEVEL TEMPERATURE	71.6	GOOD	DEGF
250	250 FOOT LEVEL WIND DIRECTION	15	GOOD	DEG.
033	33 FOOT LEVEL WIND DIRECTION	16	GOOD	DEG.
250	250 FOOT LEVEL WIND SPEED	6.3	GOOD	MPH
033	33 FOOT LEVEL WIND SPEED	5.0	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0515

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	-7.40E-04		N/A	
2	Part - Alpha	CPM	STANDBY	-1.90E+01		N/A	
3	I-131	uCi	STANDBY	+4.00E+01		N/A	
4	Bkg I	CPM	STANDBY	+3.60E+01		N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	-3.90E-06		3.70E-06	
6	Area Monitor	MR/H	1.00E-01	-5.20E-02		1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	+4.00E-06		-1.50E-06	
8	Gamma Bkg	CPM	STANDBY	-4.20E-02		1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03		-1.50E-03	
1	Part - Beta	uCi/cc*	STANDBY	+2.50E-09			
3	I-131	uCi/cc*	STANDBY	+4.70E-10			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr

Time: 05:15

'SILENT 700' COMPUTER
METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0042	00900	0011	0050	00
WS 33B	0043	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0042	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0350	03000	0340	0000	0072	0020	0064	00
WD 33B	0349	03010	0340	0001	0071	0021	0063	00
WD150A	0350	03100	0341	0000	0045	0022	0062	00
WD150B	0350	03000	0340	0002	0035	0023	0060	02
WD 250	0359	03000	0340	0010	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0715	00	TER33B	0715	00	TE150A	0735	
TE150B	0735	00	TE250A	0745	00	TE250B	0745	
DT150A	0200	00	DT150B	0200	00	DT250A	0030	
DT250B	0030							
DEW 33	0480		TEG 33	0602	00			
RAIN	0059							

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Time: 0530

Message: 31

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

ALARMS received in Control Room:

- o D-19 (Pressurizer low pressure SI 1750 psig)
- o D-21 (Steam Line Loop A Lo-Lo pressure 514 psi)
- o D-20 (Pressurizer low pressure trip 1873 psi)
- o D-28 (Containment pressure 4 psi)

Indications in the Control Room include:

- o Containment Isolation is normal
- o 2 Control Rods indicate full out, all other Control Rods fully inserted

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) The "A" S/G steam line severs where it exits the S/G.
- 2) --Containment spray initiates but there are no pumps available. (1A inoperable due to initial condition, 1B inoperable due to Bus #16 outage).
- 3) There is no 12% Boric Acid injection (MOV-826B inoperable due to initial condition, MOV-826D inoperable due to Bus #16 outage).
- 4) The core returns to power and a large amount of the fuels gap and fuel pellet activity is released.
- 5) The pressure housings on the Control Rods that are stuck out were the source of the initial condition unidentified RCS leak.
- 6) Containment Radiation levels increasing rapidly as shown by data sheets.
- 7) There is no offsite radiation release at this time.

Actions Expected:

- 1) Control Room operators take immediate actions in accordance with E-0.

1987 EVALUATED EXERCISE Time: 0530

MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown Yes/No

NIS N-41 0 N-43 0
NIS N-42 0 N-44 0

RCS Pressure 1700 psig
RCS Temperature 540 of
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 20 psig
1A S/G Level 0 %
1B S/G Level 0 %
RVLIS 100 %
1A S/G Pressure 500 psig
1B S/G Pressure 960 psig
*CET 600 of
Sump A Level 3.5 feet
Sump B Level 0 inches
A. RCP Running/Stopped
B. RCP Running/Stopped

Containment Isolation Yes/No

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses 13,14,15,17,18 16
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 19.5 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 200 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 95 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE).

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0530

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
02	AREA 2-CONTAINMENT	8.8E+3	HALM	MR/H
03	AREA 3-RADIO CHEM LAB	2.5E-1	GOOD	MR/H
04	AREA 4-CHARGING PUMP ROOM	2.5E+2	HALM	MR/H
05	AREA 5-SPENT FUEL PIT	9.0E+0	GOOD	MR/H
06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	MR/H
07	AREA 7-INCORE INSTRUMENTATION	1.1E+4	HALM	MR/H
08	AREA 8-DRUMMING STATION	3.1E+0	GOOD	MR/H
09	AREA 9-LETDOWN LINE	6.0E+2	HALM	MR/H
10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
10B	PLANT VENT IODINE MONITOR R10B	1.1E+3	GOOD	CPM
11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
13	AUX BLDG EXHAUST AIR PARTICULATE	3.0E+3	GOOD	CPM
14	AUX BLDG EXHAUST GAS MONITOR	5.5E+2	GOOD	CPM
15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
18	LIQUID WASTE DISPOSAL MONITOR	2.8E+3	GOOD	CPM
19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
29	AREA 29-CONTAINMENT HIGH RANGE	9.0E+0	HALM	R/HR
30	AREA 30-CONTAINMENT HIGH RANGE	1.0E+1	HALM	R/HR
33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	MR/H
34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
35	AREA 35-PASS SAMPLE PANEL	1.5E-1	GOOD	MR/H
36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
VAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
VAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
T250	250 FOOT LEVEL TEMPERATURE	74.0	GOOD	DEGF
T033	33 FOOT LEVEL TEMPERATURE	72.0	GOOD	DEGF
D250	250 FOOT LEVEL WIND DIRECTION	21.	GOOD	DEG.
D033	33 FOOT LEVEL WIND DIRECTION	22.	GOOD	DEG.
S250	250 FOOT LEVEL WIND SPEED	7.2	GOOD	MPH
S033	33 FOOT LEVEL WIND SPEED	5.9	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0530

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	<u>CONTAINMENT</u>	<u>Current Reading</u>	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>-7.80E-04</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-2.00E+01</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>+4.00E-04</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.60E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>-3.90E-06</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-5.20E-02</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+4.20E-06</u>	<u>-1.60E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>-4.20E-02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>	<u>-1.50E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>+3.50E-09</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>+5.0E-10</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr



20'

METEOROLOGICAL DATA

AV77										
NAME.	AVGE	ST. DEV	MIN.	MAX.	I					
WS 33A	0050	00900	0011	0060	00					
WS 33B	0050	00910	0012	0052	00					
WS150A	0040	01000	0022	0060	00					
WS150B	0042	01100	0023	0061	02					
WS 250	0063	01000	0010	0070	00					
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I		
WD 33A	0015	03000	0005	0025	0072	0020	0064	00		
WD 33B	0016	03010	0005	0025	0071	0021	0063	00		
WD150A	0017	03100	0007	0027	0045	0022	0062	00		
WD150B	0018	03000	0008	0028	0035	0023	0060	02		
WD 250	0016	03000	0006	0026	0055	0025	0061	00		
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I		
TER33A	0716	00	TER33B	0716	00	TE150A	0736			
TE150B	0736	00	TE250A	0747	00	TE250B	0747			
DT150A	0020	00	DT150B	0020	00	DT250A	0031			
DT250B	0031									
DEW 33	0436		TEG 33	0602	00					
RAIN	0060									

Time: 0531

Message: 31.5

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Data sheet indicates core uncovering and core exit thermocouples greater than 700 degrees F.

Actions Expected:

1987 EVALUATED EXERCISE

Time: 0531

MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 988 MWT
 Reactor Shutdown Yes/No

NIS N-41 65% N-43 65%
 NIS N-42 65% N-44 65%

RCS Pressure 750 psig
 RCS Temperature Tc 450 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 0 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 43 psig
 1A S/G Level 0 %
 1B S/G Level 0 %
 RVLIS 46 %
 1A S/G Pressure 132 psig
 1B S/G Pressure 800 psig
 *CET 900 °F
 Sump A Level 5 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized
 480 V Buses 13,14,15,17,18 Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS
Aux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 19.5 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 280 GPM
 FI-925 210 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 200 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 95 %Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

NaOH Tank Level = 93 %Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/ClosedService Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 50 psigComponent Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

Time: 0533

Message: 31.7

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

1987 EVALUATED EXERCISE

Time: 0533MAJOR PARAMETERS

Reactor Power Level 0 MWE/836 MWT
 Reactor Shutdown Yes/No

NIS: N-41 55% N-43 55%
 NIS: N-42 55% N-44 55%

RCS Pressure 1000 psig
 RCS Temperature Tc 470 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 5 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 57 psig
 1A S/G Level 0 %
 1B S/G Level 0 %
 RVLIS 32 %
 1A S/G Pressure 57 psig
 1B S/G Pressure 840 psig
 *CET 1300 °F
 Sump A Level 5.2 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation: Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses 13, 14, 15, 17, 18 Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 20 feet

ENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924. 250 GPMFI-925. 200 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 200 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 94 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 93 %Containment Recirc Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 50 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

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Time: 0535

Message: 32

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheet

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) See attached Emergency Operating procedures E-0 and FR-S.1 for Control Room conditions status information.

Actions Expected:

- 1) A GENERAL EMERGENCY should be declared in accordance with SC-100; "Ginna Station Event Evaluation and Classification," EAL: Loss of Engineered Safety Features; Inability to Shutdown the Reactor which results in core damage with indications of containment pressure increasing rapidly and --- reactor remains at power after reactor trip initiates, (i.e. power range indication) or EAL: Containment System; failed fuel indicated by sampling of containment atmosphere and containment pressure 30 psig and increasing or Shift Supervisors opinion containment may be breached.
- 2) Implement SC-204, "GENERAL EMERGENCY".
 - a. Make an immediate protective action. Recommendation in accordance with SC-240, "Protective Action Recommendations."
 - b. Make notifications.
- 3) Assess and monitor plant conditions. Update offsite agencies at least every 30 minutes and whenever there are significant changes to plant status.

1987 EVALUATED EXERCISE

Time: 0535

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 0 N-35 2.5X10⁻⁹ Amps
NIS N-32 0 N-36 2.5X10⁻⁹ Amps

RCS Pressure 1700 psig
RCS Temperature 500 °F
CHG. (FI-128) 0 GPM
Pressurizer Level 37 %
LTN. (FI-134) 0 GPM
Containment Pressure 55 psig
1A S/G Level 0 %
1B S/G Level 8 %
RVLIS 100 %
1A S/G Pressure 55 psig
1B S/G Pressure 700 psig
*CET 650 °F
Sump A Level 5.2 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

High Head S. I. Pumps
FI-924 0 GPM
FI-925 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
BAST Level = 55 %

Low Head S. I. Pumps
FI-626 200 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

RWST Level = 94 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
NaOH Tank Level = 93 %

Containment Isolation (Yes/No)

Containment Recirc Fans
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)
PostAccident Dampers Open/Closed

ELECTRICAL POWER

34.5 KV Bus: (Energized/Deenergized)
4 KV Buses: (Energized/Deenergized)

480 V Buses (13,14,15,17,18) Energized/Deenergized
Turbine Generator (16) Energized/Deenergized

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
B. (Running/Unloaded/STBY/OOS)
TSC (Running/Unloaded/STBY/OOS)
Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

Service Water Pumps
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
Turb. Driven (InServ/STBY/OOS)
CST Level 20 feet

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

Time: 0545

Message: 33

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

- 1) Operations stabilizes the plant using Emergency Operating Procedures.
- 2) Operations transfers the flow from the "A" MDAFWP from the "A" S/G to the "B" S/G.

1987 EVALUATED EXERCISE

Time: 0545

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 10⁴ cps N-35 5x10⁻⁴ Amps
NIS N-32 10⁴ cps N-36 5x10⁻⁴ Amps

RCS Pressure 2080 psig
RCS Temperature Tc 510 of
CHG. (FI-128) 0 GPM
Pressurizer Level 50 %
LTN. (FI-134) 0 GPM
Containment Pressure 54 psig
1A S/G Level 0 %
1B S/G Level 10 %
RVLIS 100 %
1A S/G Pressure 54 psig
1B S/G Pressure 710 psig
*CET 530 °F of
Sump A Level 5.5 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses: Energized/Deenergized
480 V Buses: 13,14,15,17,18 Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 19.5 feet

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 200 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 94 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0545

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	1.1E+5	HALM	HR/H
R03	AREA 3-RADIO CHEM LAB	2.5E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	2.5E+2	HALM	HR/H
R05	AREA 5-SPENT FUEL PIT	9.0E+0	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.0E+1	GOOD	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	1.2E+5	HALM	HR/H
R08	AREA 8-DRUMMING STATION	5.0E+0	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	6.0E+2	HALM	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.2E+3	GOOD	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	3.2E+3	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	5.6E+2	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	3.2E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	1.1E+2	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	1.2E+2	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	HR/H
R35	AREA 35-PASS SAMPLE PANEL	1.6E-1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	74.5	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	71.5	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	22.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	22.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.5	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH

SPING MONITOR SHEETS

Time: 0545

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	<u>CONTAINMENT</u>	<u>Current Reading</u>	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>-8.00E-04</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-2.00E+01</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>+4.50E-04</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.60E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>-5.00E-06</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-5.20E-02</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+5.00E-06</u>	<u>-1.70E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>-4.20E-02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>	<u>-1.70E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>+3.50E-09</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>+5.10E-10</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr

Time: 05:45

'SILENT 700' COMPUTER
METEOROLOGICAL DATA

AV77									
NAME	AVGE	ST. DEV	MIN.	MAX.	I				
WS 33A	0071	00900	0015	0080	00				
WS 33B	0062	00910	0012	0072	00				
WS150A	0040	01000	0022	0060	00				
WS150B	0042	01100	0023	0061	02				
WS 250	0070	01000	0010	0085	00				
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I	
WD 33A	0020	03000	0010	0030	0072	0020	0064	00	
WD 33B	0021	03010	0011	0031	0071	0021	0063	00	
WD150A	0020	03100	0010	0030	0045	0022	0062	00	
WD150B	0020	03000	0010	0030	0035	0023	0060	02	
WD 250	0019	03000	0010	0032	0055	0025	0061	00	
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I	
TER33A	0720	00	TER33B	0720	00	TE150A	0740		
TE150B	0741	00	TE250A	0755	00	TE250B	0750		
DT150A	0020	00	DT150B	0020	00	DT250A	0035		
DT250B	0030								
DEW 33	0485		TEG 33	0602	00				
RAIN	0060								

Time: 0550

Message: 34X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: TSC or EOF

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

A GENERAL EMERGENCY should be declared in accordance with SC-100, "Ginna Station Event Evaluation and Classification," EAL: Loss of engineered safety features; Inability to Shutdown the reactor which results in core damage with indications of containment pressure increasing rapidly and reactor remains at power after reactor trip initiated, (i.e. power range indication) or EAL: Containment Systems; failed fuel indicated by sampling of containment atmosphere and containment pressure 30 psig and increasing or Shift Supervisors opinion containment may be breached.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver if a GENERAL EMERGENCY has not yet been declared. Do not deliver if Emergency Classifications discussions are in progress.

Actions Expected:

Time: 0600

Message: 35

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1)....The Plant is fairly stable from the steam break accident but containment pressure remains high due to no spray pumps operable and only two containment fan coolers operating.

Actions Expected:

- 1) Operations continues to stabilize plant using Emergency Operating procedures.
- 2) Dose Assessment projecting doses and making recommendations as needed.

1987 EVALUATED EXERCISE

Time: 0600MAJOR PARAMETERSENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes/No)

NIS N-31 3×10^2 cps N-35 $< 10^{-11}$ amps
 NIS N-32 3×10^2 cps N-36 $< 10^{-11}$ amps

RCS Pressure 1800 psig
 RCS Temperature Tc 570 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 57 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 40 psig
 1A S/G Level 0 %
 1B S/G Level 6 %
 RVLIS 100 %
 1A S/G Pressure 40 psig
 1B S/G Pressure 700 psig
 *CET 530 °F
 Sump A Level 5.5 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes/No)ELECTRICAL POWER

34.5 KV Bus (Energized/Deenergized)
 4 KV Buses (Energized/Deenergized)

480 V Buses (13, 14, 15, 17, 18) Energized/Deenergized
 Turbine Generator (Energized/Deenergized)

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
 B. (Running/Unloaded/STBY/OOS)
 TSC (Running/Unloaded/STBY/OOS)
 Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 Turb. Driven (InServ/STBY/OOS)
 CST Level 19 feet

High Head S. I. Pumps

FI-924 0 GPM
 FI-925 0 GPM
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 1C. (InServ/STBY/OOS)
 BAST Level = 53 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 RWST Level = 94 %
Containment Spray Pumps
 FI-931A 0 GPM
 FI-931B 0 GPM
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 NaOH Tank Level = 93 %

Containment Recirc Fans

1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 1C. (InServ/STBY/OOS)
 1D. (InServ/STBY/OOS)
 PostAccident Dampers (Open/Closed)

Service Water Pumps

1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 1C. (InServ/STBY/OOS)
 1D. (InServ/STBY/OOS)
 A&B Header Pressure 50 psig
Component Cooling Water Pumps
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)

Surge Tank Level = 52 %Standby Aux. Feedwater Pumps

1C. (InServ/STBY/OOS)
 1D. (InServ/STBY/OOS)

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE) .

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0600

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.2E+5	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	2.5E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	2.5E+2	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	9.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.2E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.6E+5	HALM	MR/H
R08	AREA 8-DRUMMING STATION	5.0E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	6.0E+2	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	1.3E+3	GOOD	CPH
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPH
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	3.4E+3	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	5.6E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	3.3E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	2.2E+2	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.4E+2	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.2E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.6E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
IVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
IVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	75.5	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	72.3	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	23.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	23.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	5.1	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	4.2	GOOD	MPH

2/6



SPING MONITOR SHEETS

Time: 0600

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	-8.20E-04	N/A
2	Part - Alpha	CPM	STANDBY	-2.10E+01	N/A
3	I-131	uCi	STANDBY	+5.50E-04	N/A
4	Bkg I	CPM	STANDBY	+3.70E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	-6.00E-06	3.70E-06
6	Area Monitor	MR/H	1.00E-01	-5.20E-02	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	+6.00E-06	-1.70E-06
8	Gamma Bkg	CPM	STANDBY	-4.20E-02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03	-1.65E-03
1	Part - Beta	uCi/cc*	STANDBY	+3.70E-09	
3	I-131	uCi/cc*	STANDBY	+5.10E-10	

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 06:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0059	00700	0011	0070	00
WS 33B	0060	00910	0012	0082	00
WS150A	0049	01000	0022	0060	00
WS150B	0044	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0020	03000	0010	0030	0072	0020	0064	00
WD 33B	0021	03010	0011	0031	0071	0021	0063	00
WD150A	0022	03100	0012	0032	0045	0022	0062	00
WD150B	0021	03000	0010	0012	0035	0023	0060	02
WD 250	0023	03000	0010	0012	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0720	00	TER33B	0720	00	TE150A	0745	
TE150B	0745	00	TE250A	0755	00	TE250B	0755	
DT150A	0025	00	DT150B	0025	00	DT250A	0035	
DT250B	0035							
DEW 33	0485		TEG 33	0602	00			
RAIN	0060							



Time: 0615

Message: 36

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

1987 EVALUATED EXERCISE Time: 0615

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown. (Yes)/No
NIS N-31: 3x10² cps N-35: <10¹¹ Amps
NIS N-32: 3x10² cps N-36: <10¹¹ Amps
RCS Pressure 1700 psig
RCS Temperature Tc 510 of
CHG. (FI-128) 0 GPM
Pressurizer Level 52 %
LTN. (FI-134) 0 GPM
Containment Pressure 32 psig
1A S/G Level 0 %
1B S/G Level 8 %
RVLIS 100 %
1A S/G Pressure 32 psig
1B S/G Pressure 750 psig
*CET 530 of
Sump A Level 5.6 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes)/No

ELECTRICAL POWER

34.5 KV Bus: Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses 13,14,15,17,18 16
Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 18 feet

High Head S. I. Pumps

FI-924 0 GPM
FI-925 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
RWST Level = 94 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0615

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	3.1E+5	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	2.5E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	2.5E+2	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	9.0E+0	GOOD	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	1.3E+1	GOOD	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	3.7E+5	HALM	MR/H
R08	AREA 8-DRUMMING STATION	5.0E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	6.0E+2	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.4E+3	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	3.6E+3	GOOD	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	5.7E+2	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	4.0E+3	GOOD	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	3.1E+2	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	3.4E+2	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	1.3E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+1	GOOD	MR/H
R35	AREA 35-PASS SAMPLE PANEL	1.7E-1	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	76.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	73.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	22.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	21.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	5.2	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	4.1	GOOD	MPH

SPING MONITOR SHEETS

Time: 0615

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	-8.40E-04	N/A
2	Part - Alpha	CPM	STANDBY	-2.10E+01	N/A
3	I-131	uCi	STANDBY	+5.70E-04	N/A
4	Bkg I	CPM	STANDBY	+3.70E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	-7.00E-06	3.70E-06
6	Area Monitor	MR/H	1.00E-01	-5.20E-02	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	+7.00E-06	-1.70E-06
8	Gamma Bkg	CPM	STANDBY	-4.20E-02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.30E-03	-1.70E-03
1	Part - Beta	uCi/cc*	STANDBY	+4.00E-09	
3	I-131	uCi/cc*	STANDBY	+5.30E-10	

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr



Time: 06:15

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0041	00900	0011	0050	00
WS 33B	0042	00910	0012	0052	00
WS150A	0045	01000	0022	0060	00
WS150B	0043	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0022	03000	0012	0032	0072	0020	0064	00
WD 33B	0021	03010	0010	0031	0071	0021	0063	00
WD150A	0020	03100	0010	0030	0045	0022	0062	00
WD150B	0021	03000	0009	0031	0035	0023	0060	02
WD 250	0022	03000	0010	0032	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0730	00	TER33B	0730	00	TE150A	0750	
TE150B	0750	00	TE250A	0760	00	TE250B	0760	
DT150A	0020	00	DT150B	0020	00	DT250A	0030	
DT250B	0030							
DEW 33	0486		TEG 33	0602	00			
RAIN	0061							

Time: 0630

Message: 37

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

The Station experiences a severe aftershock from the earthquake.

Indications in the Control Room include:

- o RCS pressure rapidly decreasing.
- o Containment vessel pressure and radiation levels start increasing.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) There is no offsite radiation release at this point.
- 2) The Control Rod pressure housings that have been leaking sever causing a LOCA.

Actions Expected:

- 1) Safety injection should be initiated automatically or manually again.
- 2) Operators take actions as described in Emergency Procedures E-0 and E-1.



1987 EVALUATED EXERCISE

Time: 0630

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31: 3x10² cps N-35: <10⁻¹¹ amps
NIS N-32: 3x10² cps N-36: <10⁻¹¹ amps

RCS Pressure 900 psig
RCS Temperature Tc 570 °F
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 33 psig
1A S/G Level 0 %
1B S/G Level 0 %
RVLIS 100 %
1A S/G Pressure 33 psig
1B S/G Pressure 750 psig
*CET 530 °F
Sump A Level 11 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus (Energized/Deenergized)
4 KV Buses (Energized/Deenergized)
480 V Buses (13,14,15,17,18) Energized/Deenergized
Turbine Generator (Energized/Deenergized)

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
B. (Running/Unloaded/STBY/OOS)
TSC (Running/Unloaded/STBY/OOS)
Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
Turb. Driven (InServ/STBY/OOS)
CST Level 17.5 feet

High Head S. I. Pumps

FI-924 225 GPM
FI-925 200 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 200 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

RWST Level = 94 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

NaOH Tank Level = 93 %

Containment Recirc Fans

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

PostAccident Dampers (Open/Closed)

Service Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

A&B Header Pressure 50 psig

Component Cooling Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0630

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	1.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	4.4E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	2.5E+2	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	3.5E+1	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	5.3E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	5.0E+0	GOOD	MR/H
R09	AREA 9-LETDOWN LINE	6.0E+2	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	1.7E+3	HALM	CPH
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPH
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	4.5E+3	GOOD	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	7.0E+2	GOOD	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+1	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+1	GOOD	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	9.0E+2	GOOD	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	4.7E+3	GOOD	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	2.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	4.0E+3	GOOD	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	4.4E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	4.8E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.5E+1	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	1.7E+0	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	3.3E+0	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	75.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	73.0	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	29.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	5.9	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0630

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	<u>STANDBY</u>	<u>-9.20E-04</u>		N/A	
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>-3.00E+01</u>		N/A	
3	I-131	uCi	<u>STANDBY</u>	<u>+9.00E-04</u>		N/A	
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.90E+01</u>		N/A	
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>-1.00E-05</u>		<u>3.70E-06</u>	
6	Area Monitor	MR/H	<u>1.00E-01</u>	<u>-5.60E-02</u>		<u>1.00E-03</u>	
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>-1.00E-05</u>		<u>-1.80E-06</u>	
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>-4.90E-02</u>		<u>1.00E+01</u>	
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.30E-03</u>		<u>-1.80E-03</u>	

1	Part - Beta	uCi/cc*	STANDBY	<u>+5.00E-09</u>			
3	I-131	uCi/cc*	STANDBY	<u>+1.00E-09</u>			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr

Time: 06:30

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST.. DEV	MIN.	MAX.	I
WS 33A	0059	00800	0031	0080	00
WS 33B	0060	00910	0042	0082	00
WS150A	0050	01000	0022	0060	00
WS150B	0052	01100	0023	0061	02
WS 250	0060	01000	0010	0075	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0029	03000	0019	0039	0072	0020	0064	00
WD 33B	0030	03010	0020	0038	0071	0021	0063	00
WD150A	0031	03100	0021	0040	0045	0022	0062	00
WD150B	0030	03000	0020	0040	0035	0023	0060	02
WD 250	0029	03000	0019	0040	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0730	00	TER33B	0730	00	TE150A	0740	
TE150B	0740	00	TE250A	0750	00	TE250B	0750	
DT150A	0010	00	DT150B	0010	00	DT250A	0020	
DT250B	0022							
DEW 33	0486		TEG 33	0602	00			
RAIN	0062							



Time: 0635

Message: 38

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) There is no offsite radiation release at this point.
- 2) Containment pressure and radiation levels building up.

Actions Expected:

- 1) Operations continue with Emergency Procedures to mitigate the LOCA.



1987 EVALUATED EXERCISE

Time: 0635MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes/No)

NIS N-31 2x10² cps N-35 <10¹¹ AMPS
 NIS N-32 2x10² cps N-36 <10¹¹ AMPS

RCS Pressure 530 psig
 RCS Temperature 450 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 0 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 45 psig
 1A S/G Level 0 %
 1B S/G Level 12 %
 RVLIS 100 %
 1A S/G Pressure 45 psig
 1B S/G Pressure 750 psig
 *CET 475 °F
 Sump A Level 13 feet
 Sump B Level 0 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes/No)ELECTRICAL POWER

34.5 KV Bus. (Energized/Deenergized)
 4 KV Buses: (Energized/Deenergized)
 480 V Buses: (13, 14, 15, 17, 18) Energized/Deenergized
 Turbine Generator (Energized/Deenergized)

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
 B. (Running/Unloaded/STBY/OOS)
 TSC (Running/Unloaded/STBY/OOS)
 Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 Turb. Driven (InServ/STBY/OOS)
 CST Level 17.5 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 340 GPM
 FI-925 260 GPM
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 1C. (InServ/STBY/OOS)
 BAST. Level = 55 %

Low Head S. I. Pumps

FI-626 200 GPM
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)

RWST Level = 93 %Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 NaOH Tank Level = 93 %

Containment Recirc Fans

1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 1C. (InServ/STBY/OOS)
 1D. (InServ/STBY/OOS)
 PostAccident Dampers (Open/Closed)

Service Water Pumps

1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)
 1C. (InServ/STBY/OOS)
 1D. (InServ/STBY/OOS)
 A&B Header Pressure 50 psig
Component Cooling Water Pumps
 1A. (InServ/STBY/OOS)
 1B. (InServ/STBY/OOS)

Surge Tank Level = 52 %Standby Aux. Feedwater Pumps

1C. (InServ/STBY/OOS)
 1D. (InServ/STBY/OOS)

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

Time: 0640

Message: 39

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) There is no offsite radiation release at this point.

Actions Expected:

- 1) Operations continue with Emergency Procedures to mitigate the LOCA.



1987 EVALUATED EXERCISE

Time: 0640

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 10² cps N-35 <10¹¹ Amps
NIS N-32 10² cps N-36 <10¹¹ Amps

RCS Pressure 245 psig
RCS Temperature Tc 380 of
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 47 psig
1A S/G Level 0 %
1B S/G Level 28 %
RVLIS 100 %
1A S/G Pressure 47 psig
1B S/G Pressure 720 psig
*CET 405 of
Sump A Level 15 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus (Energized/Deenergized)
4 KV Buses (Energized/Deenergized)
480 V Buses (13,14,15,17,18) 16
Turbine Generator (Energized/Deenergized)

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
B. (Running/Unloaded/STBY/OOS)
TSC (Running/Unloaded/STBY/OOS)
Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
Turb. Driven (InServ/STBY/OOS)
CST Level 17 feet

High Head S. I. Pumps

FI-924 400 GPM
FI-925 300 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 200 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
RWST Level = 72 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)
PostAccident. Dampers Open/Closed:

Service Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



Time: 0645Message: 40GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***

ALARMS received in Control Room:

- o L-10 (Aux. Building sump pump auto start)
- o L-9 (Aux. Building sump hi level)
- o J-9 (Safeguard breaker trip)

Indications in Control Room include:

- o "A" RHR pump breaker indication shows white disagreement light lite
- o R-13 and R-14 on High Alarm.

FOR CONTROLLER USE ONLYController Notes:

- 1) If Operators attempt to restart "A" RHR pump, it will not start at this time.
- 2) If Operators check the Auxiliary Building sump pump switches on back of board, both sump pumps indicate they have trip. If attempts are made to restart them, they will not start at this time.
- 3) Plant vent monitors (see attached sheet) indicate rapid increases of radiation levels.
- 4) A major release to the Environment begins.
Release path: Containment through "B" RHR suction line out the plant vent.

Actions Expected:

- 1) Efforts should be underway to track the plume, terminate the release, and implement/coordinate PARs.



1987 EVALUATED EXERCISE

Time: 0645

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 8x10¹ cps N-35 <10⁻¹¹ Amper
NIS N-32 8x10¹ cps N-36 <10⁻¹¹ Amper
RCS Pressure 245 psig
RCS Temperature Tc 380 of
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 45 psig
1A S/G Level 0 %
1B S/G Level 54 %
RVLIS 100 %
1A S/G Pressure 45 psig
1B S/G Pressure 540 psig
*CET 405 of
Sump A Level 17 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus. Energized/Deenergized
4 KV Buses. Energized/Deenergized
480 V Buses. 13,14,15,17,18 16 Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 17 feet

High Head S. I. Pumps

FI-924 400 GPM
FI-925 300 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 53 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 89 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 50 psig

Component Cooling Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0645

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	4.4E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	6.0E+4	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	7.0E+4	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	5.3E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	3.0E+4	HALM	MR/H
R09	AREA 9-LETDOWN LINE	6.8E+4	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	1.0E+6	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+2	HALM	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	4.4E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	4.8E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.7E+5	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.0E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.0E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	75.2	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	73.2	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	29.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	29.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.2	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0645

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading		
				<u>PLANT</u>	<u>VENT</u>	<u>AIR EJECTOR</u>
1	Part. - Beta	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>		N/A
2	Part. - Alpha	CPM	<u>STANDBY</u>	<u>HIGH FAIL</u>		N/A
3	I-131	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>		N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.47E+01</u>		N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>HIGH FAIL</u>		<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>+3.00E+02</u>	<u>+3.00E+02</u>		<u>8.00E-02</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+1.10E+01</u>		<u>-4.00E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>+1.00E+03</u>		<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.11E+01</u>		<u>-1.80E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>HIGH FAIL</u>		
3	I-131	uCi/cc*	STANDBY	<u>HIGH FAIL</u>		

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.50E+00</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+8.00E-01</u>	mR/hr



Time: 06:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77									
NAME	AVGE	ST. DEV	MIN.	MAX.	I				
WS 33A	0060	00900	0019	0080	00				
WS 33B	0060	00910	0012	0082	00				
WS150A	0048	01000	0022	0060	00				
WS150B	0047	01100	0023	0061	02				
WS 250	0060	01000	0010	0055	00				
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I	
WD 33A	0029	03000	0019	0040	0072	0020	0064	00	
WD 33B	0029	03010	0020	0040	0071	0021	0063	00	
WD150A	0028	03100	0021	0039	0045	0022	0062	00	
WD150B	0028	03000	0022	0041	0035	0023	0060	02	
WD 250	0029	03000	0020	0042	0055	0025	0061	00	
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I	
TER33A	0732	00	TER33B	0732	00	TE150A	0752		
TE150B	0752	00	TE250A	0762	00	TE250B	0762		
DT150A	0020	00	DT150B	0020	00	DT250A	0030		
DT250B	0030								
DEW 33	0496		TEG 33	0602	00				
RAIN	0063								



Time: 0700

Message: 41

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Release will continue until 0800 hours.

Actions Expected:

- 1) Efforts are underway to track the plume, terminate the release and implement/coordinate PARs.
- 2) TSC and Control Room should decide to close MOV-851A in an attempt to isolate the leak from containment. It will close when they attempt it. MOV-851B will not close because it has no electrical power (Bus 16 and MCC-1D have no electrical power). All other lines, from containment, in the RHR sub-basement, isolated with containment isolation.

1987 EVALUATED EXERCISE Time: 0700

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown Yes/No

NIS. N-31: 8 X 10¹ CPS N-35: < 10¹¹ Amps
NIS. N-32: 8 X 10¹ CPS N-36: < 10¹¹ Amps

RCS Pressure 235 psig
RCS Temperature 380 °F
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 40 psig
1A S/G Level 0 %
1B S/G Level 53 %
RVLIS 100 %
1A S/G Pressure 40 psig
1B S/G Pressure 450 psig
*CET 400 °F
Sump A Level 22.6 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

High Head S. I. Pumps
FI-924 400 GPM
FI-925 300 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps
FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 87 %
Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Isolation Yes/No

Containment Recirc Fans
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses 13,14,15,17,18 Energized 16 Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

Service Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 17.5 feet

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0700

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	3.8E+6	HALM	HR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	6.0E+4	HALM	HR/H
R05	AREA 5-SPENT FUEL PIT	7.0E+4	HALM	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	4.6E+6	HALM	HR/H
R08	AREA 8-DRUMMING STATION	3.0E+4	HALM	HR/H
R09	AREA 9-LETDOWN LINE	6.8E+4	HALM	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	1.0E+6	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+2	HALM	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	3.8E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	4.2E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.7E+5	HALM	HR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+0	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.0E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.0E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	76.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	73.3	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	5.9	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH

SPING MONITOR SHEETS

Time: 0700

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	HIGH FAIL	N/A
2	Part - Alpha	CPM	STANDBY	HIGH FAIL	N/A
3	I-131	uCi	STANDBY	HIGH FAIL	N/A
4	Bkg I	CPM	STANDBY	+3.48E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	HIGH FAIL	3.70E-06
6	Area Monitor	MR/H	+3.00E+02	+3.00E+2	8.00E-02
7	Noble Gas-Mid	uCi/cc	STANDBY	+1.10E+01	+7.52E-06
8	Gamma Bkg	CPM	STANDBY	+1.00E+03	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.11E+01	-1.41E-03
1	Part - Beta	uCi/cc*	STANDBY	HIGH FAIL	
3	I-131	uCi/cc*	STANDBY	HIGH FAIL	

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.50E+00	mR/hr
(R-32): "B" Steam Line Rad Monitor	+8.00E-01	mR/hr



Time: 07:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I'
WS 33A	0061	00900	0011	0070	00
WS 33B	0062	00910	0012	0072	00
WS150A	0060	01000	0022	0060	00
WS150B	0052	01100	0023	0061	02
WS 250	0070	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0029	03000	0020	0040	0072	0020	0064	00
WD 33B	0029	03010	0020	0040	0071	0021	0063	00
WD150A	0028	03100	0021	0040	0045	0022	0062	00
WD150B	0029	03000	0022	0039	0035	0023	0060	02
WD 250	0030	03000	0020	0038	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0733	00	TER33B	0733	00	TE150A	0753	
TE150B	0753	00	TE250A	0764	00	TE250B	0764	
DT150A	0020	00	DT150B	0020	00	DT250A	0031	
DT250B	0031							
DEW 33	0496		TEG 33	0602	00			
RAIN	0063							



Time: 0715Message: 42GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLYController Notes:

- 1) Release will continue until 0800 hours.

Actions Expected:

- 1) TSC and OSC should increase efforts to repair and return the "B" Emergency Diesel Generator to operation so they can close MOV-851B to terminate the release and start the "B" containment spray pump to reduce containment pressure.
- 2) Efforts are underway to track the plume, terminate the release and implement/coordinate PARs.

1987 EVALUATED EXERCISE

Time: 0715

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 8x10¹ cps N-35 <10¹ Amps
NIS N-32 8x10¹ cps N-36 <10¹ Amps

RCS Pressure 230 psig
RCS Temperature Tc 380 °F
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 30 psig
1A S/G Level 0 %
1B S/G Level 52 %
RVLIS 100 %
1A S/G Pressure 30 psig
1B S/G Pressure 450 psig
*CET 398 °F
Sump A Level 27.6 feet
Sump B Level 0 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized
480 V Buses: 13,14,15,17,18 16 Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
B. Running/Unloaded/STBY/OOS
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 17.5 feet

High Head S. I. Pumps

FI-924 400 GPM
FI-925 300 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 85 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
PostAccident Dampers Open/Closed

Service Water Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0715

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	3.3E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	6.0E+4	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	7.0E+4	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	3.9E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	3.0E+4	HALM	MR/H
R09	AREA 9-LETDOWN LINE	6.8E+4	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	1.0E+6	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.2E+2	HALM	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	3.3E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	3.6E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.7E+5	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+1	HALM	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.0E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.0E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	76.1	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	73.4	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	39.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH

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SPING. MONITOR SHEETS

Time: 0715

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading		
				PLANT	VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	HIGH FAIL		N/A
2	Part. - Alpha	CPM	STANDBY	HIGH FAIL		N/A
3	I-131	uCi	STANDBY	HIGH FAIL		N/A
4	Bkg I.	CPM	STANDBY	+3.48E+01		N/A
5	Noble Gas-Low	uCi/cc	STANDBY	HIGH FAIL		3.70E-06
6	Area Monitor	MR/H	+3.00E+02	+3.00E+02		8.00E-02
7	Noble Gas-Mid	uCi/cc	STANDBY	+1.10E+01		+7.50E-06
8	Gamma Bkg	CPM	STANDBY	+1.00E+03		1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.11E+01		-1.41E-03
1	Part. - Beta	uCi/cc*	STANDBY	HIGH FAIL		
3	I-131	uCi/cc*	STANDBY	HIGH FAIL		

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.50E+00	mR/hr
(R-32): "B" Steam Line Rad Monitor	+8.00E-01	mR/hr



Time: 07:15

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77									
NAME	AVGE	ST. DEV	MIN.	MAX.	I				
WS 33A	0051	00900	0011	0057	00				
WS 33B	0052	00910	0012	0059	00				
WS150A	0040	01000	0022	0060	00				
WS150B	0042	01100	0023	0061	02				
WS 250	0060	01000	0010	0055	00				
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I	
WD 33A	0030	03000	0020	0040	0072	0020	0064	00	
WD 33B	0031	03010	0021	0041	0071	0021	0063	00	
WD150A	0029	03100	0022	0042	0045	0022	0062	00	
WD150B	0030	03000	0021	0041	0035	0023	0060	02	
WD 250	0030	03000	0020	0040	0055	0025	0061	00	
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I	
TER33A	0733	00	TER33B	0733	00	TE150A	0754		
TE150B	0754	00	TE250A	0763	00	TE250B	0763		
DT150A	0021	00	DT150B	0021	00	DT250A	0033		
DT250B	0033								
DEW 33	0496		TEG 33	0602	00				
RAIN	0064								

Time: 0730Message: 43GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLYController Notes:

- 1) Release will continue until 0800 hours.

Actions Expected:

- 1) Repair on "B" Emergency Diesel Generator is nearing completion.
- 2) Plume tracking, implementing and coordinating PARs and release termination efforts continue.



1987 EVALUATED EXERCISE

Time: 0730MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes/No)

NIS: N-31 8x10' cps N-35 <10' AMPS
 NIS: N-32 8x10' cps N-36 <10' AMPS

RCS Pressure 230 psig
 RCS Temperature Tc 380 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 0 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 25 psig
 1A S/G Level 0 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 25 psig
 1B S/G Pressure 450 psig
 *CET 398 °F
 Sump A Level 31 feet
 Sump B Level 8 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes/No)ELECTRICAL POWER

34.5 KV Bus. Energized/Deenergized
 4 KV Buses: Energized/Deenergized
 480 V Buses: 13,14,15,17,18 16 Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 18 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 400 GPM
 FI-925 300 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 82 %Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

NaOH Tank Level = 93 %Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/ClosedService Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 50 psigComponent Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0730

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	2.7E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	6.0E+4	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	7.0E+4	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	3.2E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	3.0E+4	HALM	MR/H
R09	AREA 9-LETDOWN LINE	6.8E+4	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPH
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPH
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	1.0E+6	HALM	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.3E+2	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.3E+2	HALM	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	2.7E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	3.2E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.7E+5	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.0E+2	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	1.1E+3	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	76.2	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	73.2	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	29	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	29	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0730

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading			
				PLANT	VENT	AIR	EJECTOR
1	Part - Beta	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>		N/A	
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>HIGH FAIL</u>		N/A	
3	I-131	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>		N/A	
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.48E+01</u>		N/A	
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>HIGH FAIL</u>		<u>3.70E-06</u>	
6	Area Monitor	MR/H	<u>+3.00E+02</u>	<u>+3.00E+02</u>		<u>8.00E-02</u>	
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+1.10E+01</u>		<u>+7.50E-06</u>	
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>+1.00E+03</u>		<u>1.00E+01</u>	
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.11E+01</u>		<u>-1.41E-03</u>	

1	Part - Beta	uCi/cc*	STANDBY	<u>HIGH FAIL</u>			
3	I-131	uCi/cc*	STANDBY	<u>HIGH FAIL</u>			

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.50E+00</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+8.00E-01</u>	mR/hr



Time: 07:30

'SILENT 700' COMPUTER

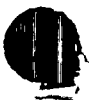
METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0049	00900	0011	0050	00
WS 33B	0049	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0029	03000	0019	0040	0072	0020	0064	00
WD 33B	0028	03010	0018	0040	0071	0021	0063	00
WD150A	0029	03100	0020	0039	0045	0022	0062	00
WD150B	0030	03000	0020	0040	0035	0023	0060	02
WD 250	0031	03000	0020	0040	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0733	00	TER33B	0733	00	TE150A	0753	
TE150B	0753	00	TE250A	0765	00	TE250B	0765	
DT150A	0020	00	DT150B	0020	00	DT250A	0032	
DT250B	0032							
DEW 33	0506		TEG 33	0602	00			
RAIN	0064							



Time: 0745

Message: 44

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Release will continue until 0800 hours.

Actions Expected:

- 1) Repair on "B" Emergency Diesel Generator is almost completed.
- 2) Plume tracking, implementing and coordinating PARS and release termination efforts continue.

1987 EVALUATED EXERCISE

Time: 0745MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes) No

NIS N-31 8x10' cps N-35 <10' Amps
 NIS N-32 8x10' cps N-36 <10' Amps

RCS Pressure 225 psig
 RCS Temperature Tc 375 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 0 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 20 psig
 1A S/G Level 0 %
 1B S/G Level 51 %
 RVLIS 100 %
 1A S/G Pressure 20 psig
 1B S/G Pressure 445 psig
 *CET 397 °F
 Sump A Level 31 feet
 Sump B Level 8 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes) NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses 13,14,15,17,18 16
Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 18 feet

ENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924 400 GPMFI-925 300 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 80 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 93 %Containment Recirc Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 50 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0745

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	2.0E+6	HALM	HR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	6.0E+4	HALM	HR/H
R05	AREA 5-SPENT FUEL PIT	7.0E+4	HALM	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.8E+6	HALM	HR/H
R08	AREA 8-DRUMMING STATION	3.0E+4	HALM	HR/H
R09	AREA 9-LETDOWN LINE	6.8E+4	HALM	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPH
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPH
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPH
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPH
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPH
R14	AUX BLDG EXHAUST GAS MONITOR	1.0E+6	HALM	CPH
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPH
R16	CV COOLING HX SERVICE WATER OUT	7.5E+2	HALM	CPH
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPH
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPH
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPH
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPH
R29	AREA 29-CONTAINMENT HIGH RANGE	2.0E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.8E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.7E+5	HALM	HR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+0	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.2E+2	GOOD	CPH
R37	CONTROL ROOM PARTICULATE MONITOR	1.6E+3	GOOD	CPH
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPH
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	77.2	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	74.2	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	29.1	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	5.9	GOOD	MPH

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SPING MONITOR SHEETS

Time: 0745

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	<u>CONTAINMENT</u>	<u>Current Reading</u>	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>HIGH FAIL</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.49E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>HIGH FAIL</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>+3.00E+02</u>	<u>+3.00E+02</u>	<u>8.00E-02</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+1.10E+01</u>	<u>+7.50E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>1.00E+03</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+1.10E+01</u>	<u>-1.41E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>HIGH FAIL</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>HIGH FAIL</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.50E+00</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+8.00E-01</u>	mR/hr



Time: 07:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0059	00900	0022	0070	00
WS 33B	0059	00910	0032	0052	00
WS150A	0056	01000	0022	0060	00
WS150B	0052	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0030	03000	0021	0041	0072	0020	0064	00
WD 33B	0031	03010	0020	0041	0071	0021	0063	00
WD150A	0032	03100	0021	0040	0045	0022	0062	00
WD150B	0030	03000	0020	0041	0035	0023	0060	02
WD 250	0029	03000	0020	0040	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0742	00	TER33B	0742	00	TE150A	0753	
TE150B	0753	00	TE250A	0765	00	TE250B	0765	
DT150A	0011	00	DT150B	0011	00	DT250A	0033	
DT250B	0033							
DEW 33	0506		TEG 33	0602	00			
RAIN	0065							



Time: 0750Message: 45XGINNA STATION1987 EVALUATED EXERCISEMESSAGE FORM

Message for: OSC Team repairing 1B Emergency Diesel Generator

Simulated Plant Conditions:

Message: ***THIS IS AN EXERCISE***

The 1B Emergency Diesel Generator lube oil pump replacement is complete and Diesel is ready to be lined up for operation.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver verbally to OSC team.
- 2) 1B Diesel Generator to be tied to Bus 16 just before 0800 hours.
- 3) When MOV-851B is closed, the release to the environment is terminated.

Actions Expected:

- 1) Operations to tie 1B Emergency Diesel Generator to 480 volt Bus #16 energizing both Bus 16 and MCC-1D.
- 2) Operations to attempt to close MOV-851B. When attempt is made, MOV-851B will go closed.

Time: 0800

Message: 46

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) TSC and Control Room should talk about starting or not starting the 1B RHR pump due to the environmental problem in the RHR sub-basement area.

Actions Expected:

- 1) Operations should start needed equipment when Bus #16 returned to service (i.e. 1B containment spray pump, 1B, 1C containment fan coolers, 1B SI pump if needed, 1B auxiliary feedwater pump if needed, etc.).
- 2) Plume tracking, implementing and coordinating PARs continues.



1987 EVALUATED EXERCISE

Time: 0800

MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 8x10⁶ cps N-35 <10⁻¹¹ amps
NIS N-32 8x10⁶ cps N-36 <10⁻¹¹ amps
RCS Pressure 225 psig
RCS Temperature Tc 375 °F
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 20 psig
1A S/G Level 0 %
1B S/G Level 51 %
RVLIS 100 %
1A S/G Pressure 20 psig
1B S/G Pressure 445 psig
*CET 397 °F
Sump A Level 31 feet
Sump B Level 8 inches
A RCP Running/Stopped
B RCP Running/Stopped

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus (Energized/Deenergized)
4 KV Buses (Energized/Deenergized)

480 V Buses (Energized/Deenergized)

Turbine Generator (Energized/Deenergized)

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
B. (Running/Unloaded/STBY/OOS)
TSC (Running/Unloaded/STBY/OOS)
Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 18.5 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 400 GPM
FI-925 300 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

RWST Level = 77 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
NaOH Tank Level = 93 %

Containment Recirc Fans

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

PostAccident Dampers (Open/Closed)

Service Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

A&B Header Pressure 50 psig

Component Cooling Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0800

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	1.5E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	6.0E+4	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	7.0E+4	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.3E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	3.0E+4	HALM	MR/H
R09	AREA 9-LETDOWN LINE	6.8E+4	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	1.0E+6	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	7.5E+2	HALM	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	1.5E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.3E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.7E+5	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.5E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.2E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.6E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
UVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
UVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	77.3	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	74.3	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	29.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.2	GOOD	MPH

SPING MONITOR SHEETS

Time: 0800

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading		
				PLANT	VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	HIGH FAIL		N/A
2	Part - Alpha	CPM	STANDBY	HIGH FAIL		N/A
3	I-131	uCi	STANDBY	HIGH FAIL		N/A
4	Bkg I	CPM	STANDBY	+3.49E+01		N/A
5	Noble Gas-Low	uCi/cc	STANDBY	HIGH FAIL		3.70E-06
6	Area Monitor	MR/H	+3.00E+02	+3.00E+02		8.00E-02
7	Noble Gas-Mid	uCi/cc	STANDBY	+1.10E+01		+7.50E-06
8	Gamma Bkg	CPM	STANDBY	+1.00E+03		1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+1.10E+01		-1.41E-03
1	Part - Beta	uCi/cc*	STANDBY	HIGH FAIL		
3	I-131	uCi/cc*	STANDBY	HIGH FAIL		

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.50E+00	mR/hr
(R-32): "B" Steam Line Rad Monitor	+8.00E-01	mR/hr

Time: 08:00

'SILENT 700' COMPUTER
METEOROLOGICAL DATA

AV77										
NAME	AVGE	ST. DEV	MIN.	MAX.	I					
WS 33A	0060	00900	0011	0080	00					
WS 33B	0042	00910	0012	0082	00					
WS150A	0040	01000	0022	0060	00					
WS150B	0042	01100	0023	0061	02					
WS 250	0030	01000	0010	0055	00					
NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I		
WD 33A	0029	03000	0020	0039	0072	0020	0064	00		
WD 33B	0030	03010	0020	0040	0071	0021	0063	00		
WD150A	0031	03100	0020	0040	0045	0022	0062	00		
WD150B	0029	03000	0021	0041	0035	0023	0060	02		
WD 250	0029	03000	0022	0040	0055	0025	0061	00		
NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I		
TER33A	0743	00	TER33B	0743	00	TE150A	0753			
TE150B	0753	00	TE250A	0773	00	TE250B	0773			
DT150A	0010	00	DT150B	0010	00	DT250A	0030			
DT250B	0030									
DEW 33	0436		TEG 33	0602	00					
RAIN	0066									



Time: 0815

Message: 47

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) - The release is terminated.

Actions Expected:

- 1) Plume tracking, implementing and coordinating PARs continues.
- 2) Plant continues to recover from the loss of coolant accident.

1987 EVALUATED EXERCISE

Time: 0815MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes/No)

NIS N-31: 8X10' cps N-35: <10' amps
 NIS N-32: 8X10' cps N-36: <10' amps

RCS Pressure 225 psig
 RCS Temperature Tc 375 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 0 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 18 psig
 1A S/G Level 0 %
 1B S/G Level 50 %
 RVLIS 100 %
 1A S/G Pressure 18 psig
 1B S/G Pressure 440 psig
 *CET 397 °F
 Sump A Level 31 feet
 Sump B Level 78 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes/No)ELECTRICAL POWER

34.5 KV Bus. Energized/Deenergized
 4 KV Buses. Energized/Deenergized

480 V Buses. Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS

Turb. Driven

CST Level

InServ/STBY/OOS18.5 feetENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924 400 GPMFI-925 300 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 75 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 92 %Containment Recirc Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 50 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0815

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	1.5E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	3.0E+3	HALM	MR/H
R05	AREA 5-SPENT FUEL PIT	3.5E+3	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.3E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	2.0E+3	HALM	MR/H
R09	AREA 9-LETDOWN LINE	3.8E+3	HALM	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	3.0E+3	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	2.0E+2	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	1.0E+6	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	1.5E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.3E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	5.5E+0	HALM	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.0E+4	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.4E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.2E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.6E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
VAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
VAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
T250	250 FOOT LEVEL TEMPERATURE	77.4	GOOD	DEGF
T033	33 FOOT LEVEL TEMPERATURE	73.6	GOOD	DEGF
D250	250 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
D033	33 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
S250	250 FOOT LEVEL WIND SPEED	6.3	GOOD	MPH
S033	33 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH

SPING MONITOR SHEETS

Time: 0815

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading		
				PLANT VENT	AIR	EJECTOR
1	Part - Beta	uCi	STANDBY	HIGH FAIL	N/A	
2	Part - Alpha	CPM	STANDBY	HIGH FAIL	N/A	
3	I-131	uCi	STANDBY	HIGH FAIL	N/A	
4	Bkg I	CPM	STANDBY	+3.48E+01	N/A	
5	Noble Gas-Low	uCi/cc	STANDBY	+5.50E-05	3.70E-06	
6	Area Monitor	MR/H	+5.00E+01	+6.00E+01	1.00E-03	
7	Noble Gas-Mid	uCi/cc	STANDBY	+5.50E-05	+5.0E-06	
8	Gamma Bkg	CPM	STANDBY	+1.00E+02	1.00E+01	
9	Noble Gas-High	uCi/cc	STANDBY	+2.00E-03	-1.40E-03	
1	Part - Beta	uCi/cc*	STANDBY	HIGH FAIL		
3	I-131	uCi/cc*	STANDBY	HIGH FAIL		

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr

Time: 08:15

'SILENT 700' COMPUTER
METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0051	00900	0011	0059	00
WS 33B	0042	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0030	03000	0020	0041	0072	0020	0064	00
WD 33B	0030	03010	0021	0042	0071	0021	0063	00
WD150A	0030	03100	0022	0043	0045	0022	0062	00
WD150B	0029	03000	0020	0041	0035	0023	0060	02
WD 250	0028	03000	0021	0040	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0736	00	TER33B	0736	00	TE150A	0756	
TE150B	0756	00	TE250A	0774	00	TE250B	0774	
DT150A	0020	00	DT150B	0020	00	DT250A	0038	
DT250B	0038							
DEW 33	0506		TEG 33	0602	00			
RAIN	0066							



Time: 0830

Message: 48

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

1) ---The release is terminated.

Actions Expected:

- 1) Plume tracking, implementing and coordinating PARS continues.
- 2) Plant continues to recover from the loss of coolant accident.

1987 EVALUATED EXERCISE Time: 0830

MAJOR PARAMETERS

ENGINEERED SAFEGUARDS

Reactor Power Level 0 MWE/ 0 MWT
Reactor Shutdown (Yes/No)

NIS N-31 8x10' cps N-35 <10" amps
NIS N-32 8x10' cps N-36 <10" amps

RCS Pressure 2.15 psig
RCS Temperature Tc 374 oF
CHG. (FI-128) 0 GPM
Pressurizer Level 0 %
LTN. (FI-134) 0 GPM
Containment Pressure 10 psig
1A S/G Level 0 %
1B S/G Level 50 %
RVLIS 100 %
1A S/G Pressure 10 psig
1B S/G Pressure 440 psig
*CET 384 oF
Sump A Level 31 feet
Sump B Level 113 inches
A RCP Running/Stopped
B RCP Running/Stopped

High Head S. I. Pumps
FI-924 450 GPM
FI-925 370 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
BAST Level = 55 %

Low Head S. I. Pumps
FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 67 %

Containment Spray Pumps
FI-931A 0 GPM
FI-931B 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
NaOH Tank Level = 85 %

Containment Isolation (Yes/No)

Containment Recirc Fans
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)
PostAccident Dampers Open/Closed

ELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
B. (Running/Unloaded/STBY/OOS)
TSC Running/Unloaded/STBY/OOS
Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDS
Aux. Feedwater Pumps

Service Water Pumps
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)
A&B Header Pressure 50 psig
Component Cooling Water Pumps
1A. (InServ/STBY/OOS)
1B. InServ/STBY/OOS

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 19 feet

Surge Tank Level = 52 %
Standby Aux. Feedwater Pumps
1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0830

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	1.5E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	9.0E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	7.5E+1	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.3E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	4.5E+1	HALM	MR/H
R09	AREA 9-LETDOWN LINE	1.0E+2	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	2.6E+3	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	2.0E+2	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	5.0E+5	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	1.5E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.2E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	4.0E+1	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	2.5E+2	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.0E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.2E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.6E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPH
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPH
WT250	250 FOOT LEVEL TEMPERATURE	77.8	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	74.9	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	32.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	31.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.2	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH



SPING MONITOR SHEETS

Time: 0830

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				<u>PLANT VENT</u>	<u>AIR EJECTOR</u>
1	Part - Beta	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>	N/A
2	Part - Alpha	CPM	<u>STANDBY</u>	<u>HIGH FAIL</u>	N/A
3	I-131	uCi	<u>STANDBY</u>	<u>HIGH FAIL</u>	N/A
4	Bkg I	CPM	<u>STANDBY</u>	<u>+3.48E+01</u>	N/A
5	Noble Gas-Low	uCi/cc	<u>STANDBY</u>	<u>+5.10E-05</u>	<u>3.70E-06</u>
6	Area Monitor	MR/H	<u>+4.00E+01</u>	<u>+5.00E+01</u>	<u>1.00E-03</u>
7	Noble Gas-Mid	uCi/cc	<u>STANDBY</u>	<u>+5.10E-05</u>	<u>-7.52E-06</u>
8	Gamma Bkg	CPM	<u>STANDBY</u>	<u>+1.00E+02</u>	<u>1.00E+01</u>
9	Noble Gas-High	uCi/cc	<u>STANDBY</u>	<u>+2.00E-03</u>	<u>-1.41E-03</u>
1	Part - Beta	uCi/cc*	STANDBY	<u>HIGH FAIL</u>	_____
3	I-131	uCi/cc*	STANDBY	<u>HIGH FAIL</u>	_____

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr
(R-32): "B" Steam Line Rad Monitor	<u>+1.00E-02</u>	mR/hr

Time: 08:30

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0051	00900	0011	0059	00
WS 33B	0052	00910	0012	0059	00
WS150A	0040	01000	0022	0060	00
WS150B	0042	01100	0023	0061	02
WS 250	0060	01000	0010	0067	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0031	03000	0020	0040	0072	0020	0064	00
WD 33B	0032	03010	0020	0040	0071	0021	0063	00
WD150A	0031	03100	0020	0040	0045	0022	0062	00
WD150B	0031	03000	0020	0040	0035	0023	0060	02
WD 250	0031	03000	0020	0041	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0749	00	TER33B	0749	00	TE150A	0769	
TE150B	0769	00	TE250A	0779	00	TE250B	0779	
DT150A	0020	00	DT150B	0020	00	DT250A	0030	
DT250B	0030							
DEW 33	0506		TEG 33	0602	00			
RAIN	0067							



Time: 0845

Message: 49

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) TSC and OSC should evaluate an attempt to start "A" RHR pump again as it is the only pump available for the recirculation mode.
- 2) If and when the TSC decides to try the "A" RHR pump, the pump starts and runs ok.

Actions Expected:

- 1) TSC have Control Room attempt to start "A" RHR pump.
- 2) Plume tracking, implementing and coordinating PARS continues.
- 3) Plant continues to recover from loss of coolant accident.

1987 EVALUATED EXERCISE

Time: 0845MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes) No

NIS N-31 8x10¹ cps N-35 <10⁻¹¹ Amps
 NIS N-32 8x10¹ cps N-36 <10⁻¹¹ Amps

RCS Pressure 210 psig
 RCS Temperature T_c 364 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 0 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 5 psig
 1A S/G Level 0 %
 1B S/G Level 50 %
 RVLIS 100 %
 1A S/G Pressure 5 psig
 1B S/G Pressure 430 psig
 *CET 374 °F
 Sump A Level 31 feet
 Sump B Level 113 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes) NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/DeenergizedTurbine Generator Energized/DeenergizedDIESEL GENERATORSA. Running/Unloaded/STBY/OOSB. Running/Unloaded/STBY/OOSTSC Running/Unloaded/STBY/OOSSecurity Running/Unloaded/STBY/OOSENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS1B. InServ/STBY/OOS

Turb. Driven

CST Level

InServ/STBY/OOS
19 feetENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924 450 GPMFI-925 370 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 60 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 80 %Containment Recirc Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 50 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0845

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	MR/H
R02	AREA 2-CONTAINMENT	1.5E+6	HALM	MR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	MR/H
R04	AREA 4-CHARGING PUMP ROOM	9.0E+1	GOOD	MR/H
R05	AREA 5-SPENT FUEL PIT	6.5E+1	HALM	MR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	MR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.3E+6	HALM	MR/H
R08	AREA 8-DRUMMING STATION	3.0E+1	HALM	MR/H
R09	AREA 9-LETDOWN LINE	1.0E+2	GOOD	MR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	2.4E+3	HALM	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	2.0E+2	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	4.0E+5	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	1.5E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.2E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	4.0E+0	GOOD	MR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	2.3E+2	HALM	MR/H
R35	AREA 35-PASS SAMPLE PANEL	3.0E+0	GOOD	MR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.2E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.6E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	77.9	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	75.2	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	30.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	29.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.3	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	6.1	GOOD	MPH

SPING MONITOR SHEETS

Time: 0845

(R-12A)

(R-14A)

(R-15A)

CHANNEL #	TYPE	UNITS	CONTAINMENT	Current Reading	
				PLANT VENT	AIR EJECTOR
1	Part - Beta	uCi	STANDBY	HIGH FAIL	N/A
2	Part - Alpha	CPM	STANDBY	HIGH FAIL	N/A
3	I-131	uCi	STANDBY	HIGH FAIL	N/A
4	Bkg I	CPM	STANDBY	+3.48E+01	N/A
5	Noble Gas-Low	uCi/cc	STANDBY	+5.00E-05	3.70E-06
6	Area Monitor	MR/H	+4.00E+01	+5.00E+01	1.00E-03
7	Noble Gas-Mid	uCi/cc	STANDBY	+5.00E-05	5.00E-06
8	Gamma Bkg	CPM	STANDBY	+1.00E+02	1.00E+01
9	Noble Gas-High	uCi/cc	STANDBY	+2.00E-03	-1.40E-03
1	Part - Beta	uCi/cc*	STANDBY	HIGH FAIL	
3	I-131	uCi/cc*	STANDBY	HIGH FAIL	

* SPING CONSOLE PLACED IN "INTERPRETED MODE"

STEAM LINE MONITORS:

(R-31): "A" Steam Line Rad Monitor	+1.00E-02	mR/hr
(R-32): "B" Steam Line Rad Monitor	+1.00E-02	mR/hr

Time: 08:45

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0051	00900	0011	0055	00
WS 33B	0049	00910	0012	0052	00
WS150A	0040	01000	0022	0060	00
WS150B	0046	01100	0023	0061	02
WS 250	0050	01000	0010	0055	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0030	03000	0020	0040	0072	0020	0064	00
WD 33B	0030	03010	0020	0040	0071	0021	0063	00
WD150A	0031	03100	0021	0042	0045	0022	0062	00
WD150B	0032	03000	0021	0042	0035	0023	0060	02
WD 250	0033	03000	0022	0043	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0753	00	TER33B	0753	00	TE150A	0774	
TE150B	0774	00	TE250A	0774	00	TE250B	0774	
DT150A	0021	00	DT150B	0021	00	DT250A	0021	
DT250B	0021							
DEW 33	0516		TEG 33	0602	00			
RAIN	0068							

Time: 0900

Message: 50

GINNA STATION
1987 EVALUATED EXERCISE
MESSAGE FORM

Message for: Control Room
Simulated Plant Conditions: See attached sheets.
Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Offsite radiation levels have significantly decreased due to plume passage. Downgrade discussions may commence. Recovery/re-entry discussions may commence.

Actions Expected:

- 1) The EOF and TSC should be discussing actions to cooldown and depressurize the Reactor coolant system. This could include the following:
 - A) use of the RHR system
 - B) continue with the injection mode and then switch over to recirculation mode when required.These discussions could conclude that a large amount of radioactive water will be brought into the Auxiliary Building using either of the above methods. These discussions could also conclude that it may be better to go on RHR as there are two RHR pumps available when on RHR but only one RHR pump available for the recirculation mode because of the break in the "B" RHR pump suction line from containment.
- 2) The EOF and TSC should be discussing bringing in and hooking up a spare transformer to place 480 volt Bus #16 back on offsite power to allow shutting down the "B" Emergency Diesel Generator.
- 3) The EOF and TSC should be discussing what inspections should be performed because of the earthquake, to ensure long term cooling of the core.
- 4) The Engineering Support Center should be calculating an estimate of the core damage involved.
- 5) As plant conditions improve the EOF and TSC should evaluate the possibility of reducing the classification per SC-110 (Ginna Station Event Evaluation for reducing the classification).
- 6) The EOF and TSC should be looking ahead to the long term recovery phase per step 3.16 of the Corporate Recovery Managers checklist.



1987 EVALUATED EXERCISE

Time: 0900MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown (Yes/No)

NIS N-31 8x10 cps N-35 <10" Amps
 NIS N-32 8x10 cps N-36 <10" Amps

RCS Pressure 200 psig
 RCS Temperature 354 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 5 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 3 psig
 1A S/G Level 0 %
 1B S/G Level 50 %
 RVLIS 100 %
 1A S/G Pressure 3 psig
 1B S/G Pressure 425 psig
 *CET 364 °F
 Sump A Level 31 feet
 Sump B Level 113 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation (Yes/No)ELECTRICAL POWER

34.5 KV Bus. Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS

Turb. Driven

InServ/STBY/OOS

CST Level

19.5 feetENGINEERED SAFEGUARDSHigh Head S. I. PumpsFI-924 450 GPMFI-925 370 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOSBAST Level = 55 %Low Head S. I. PumpsFI-626 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSRWST Level = 52 %Containment Spray PumpsFI-931A 0 GPMFI-931B 0 GPM1A. InServ/STBY/OOS1B. InServ/STBY/OOSNaOH Tank Level = 75 %Containment Recirc. Fans1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSPostAccident Dampers Open/ClosedService Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOS1C. InServ/STBY/OOS1D. InServ/STBY/OOSA&B Header Pressure 50 psigComponent Cooling Water Pumps1A. InServ/STBY/OOS1B. InServ/STBY/OOSSurge Tank Level = 52 %Standby Aux. Feedwater Pumps1C. InServ/STBY/OOS1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



AREA RADIOLOGICAL AND METEOROLOGICAL DATA

TIME: 0900-1000

POINT ID	DESCRIPTION	CURRENT VALUE	QUALITY CODE	ENGR UNITS
R01	AREA 1-CONTROL ROOM	2.0E-1	GOOD	HR/H
R02	AREA 2-CONTAINMENT	1.4E+6	HALM	HR/H
R03	AREA 3-RADIO CHEM LAB	3.0E-1	GOOD	HR/H
R04	AREA 4-CHARGING PUMP ROOM	7.0E+1	GOOD	HR/H
R05	AREA 5-SPENT FUEL PIT	2.0E+1	GOOD	HR/H
R06	AREA 6-NUCLEAR SAMPLE ROOM	5.0E+1	HALM	HR/H
R07	AREA 7-INCORE INSTRUMENTATION	2.0E+6	HALM	HR/H
R08	AREA 8-DRUMMING STATION	1.0E+1	GOOD	HR/H
R09	AREA 9-LETDOWN LINE	8.5E+1	GOOD	HR/H
R10A	CONTAINMENT IODINE MONITOR R10A	1.0E+6	HALM	CPM
R10B	PLANT VENT IODINE MONITOR R10B	1.0E+6	HALM	CPM
R11	CONTAINMENT AIR PARTICULATE	1.0E+6	HALM	CPM
R12	CONTAINMENT GAS MONITOR	1.0E+6	HALM	CPM
R13	AUX BLDG EXHAUST AIR PARTICULATE	1.0E+6	HALM	CPM
R14	AUX BLDG EXHAUST GAS MONITOR	2.0E+3	GOOD	CPM
R15	CONDENSER AIR EJECTOR EXHAUST	5.2E+2	GOOD	CPM
R16	CV COOLING HX SERVICE WATER OUT	2.0E+2	GOOD	CPM
R17	COMPONENT COOLING PUMP SUCT HDR	1.0E+6	HALM	CPM
R18	LIQUID WASTE DISPOSAL MONITOR	2.0E+5	HALM	CPM
R19	STEAM GENERATOR BLOWDOWN DRAIN	5.0E+3	GOOD	CPM
R20	SPENT FUEL PIT HX SERV WATER OUT	1.0E+6	HALM	CPM
R29	AREA 29-CONTAINMENT HIGH RANGE	1.5E+3	HALM	R/HR
R30	AREA 30-CONTAINMENT HIGH RANGE	2.0E+3	HALM	R/HR
R33	AREA 33-HOT INTERMEDIATE BLDG	4.0E+0	GOOD	HR/H
R34	AREA 34-AUX BLDG CV SPRAY PUMP	1.5E+2	HALM	HR/H
R35	AREA 35-PASS SAMPLE PANEL	3.0E+1	GOOD	HR/H
R36	CONTROL ROOM NOBLE GAS MONITOR	3.2E+2	GOOD	CPM
R37	CONTROL ROOM PARTICULATE MONITOR	1.6E+3	GOOD	CPM
R38	CONTROL ROOM IODINE MONITOR	1.2E+0	GOOD	CPM
HVAC1	CONTROL ROOM CHLORINE ANALYZER	0.0075	GOOD	PPM
HVAC2	CONTROL ROOM AMMONIA ANALYZER	0.7763	GOOD	PPM
WT250	250 FOOT LEVEL TEMPERATURE	76.0	GOOD	DEGF
WT033	33 FOOT LEVEL TEMPERATURE	75.5	GOOD	DEGF
WD250	250 FOOT LEVEL WIND DIRECTION	29.	GOOD	DEG.
WD033	33 FOOT LEVEL WIND DIRECTION	28.	GOOD	DEG.
WS250	250 FOOT LEVEL WIND SPEED	6.0	GOOD	MPH
WS033	33 FOOT LEVEL WIND SPEED	5.9	GOOD	MPH



Time: 09:00 - 11:00

'SILENT 700' COMPUTER

METEOROLOGICAL DATA

AV77

NAME	AVGE	ST. DEV	MIN.	MAX.	I
WS 33A	0071	00900	0011	0090	00
WS 33B	0062	00910	0012	0082	00
WS150A	0050	01000	0022	0060	00
WS150B	0062	01100	0023	0071	02
WS 250	0060	01000	0010	0075	00

NAME	AVGE	ST. DEV	MIN.	MAX.	MNDR	AVRN	CNT	I
WD 33A	0029	03000	0019	0040	0072	0020	0064	00
WD 33B	0029	03010	0019	0040	0071	0021	0063	00
WD150A	0028	03100	0018	0041	0045	0022	0062	00
WD150B	0028	03000	0019	0042	0035	0023	0060	02
WD 250	0028	03000	0020	0043	0055	0025	0061	00

NAME	AVGE	I	NAME	AVGE	I	NAME	AVGE	I
TER33A	0750	00	TER33B	0750	00	TE150A	0750	
TE150B	0750	00	TE250A	0760	00	TE250B	0760	
DT150A	0000	00	DT150B	0000	00	DT250A	0010	
DT250B	0010							
DEW 33	050		TEG 33	0602	00			
RAIN	0069							



283

Time: 0915

Message: 51

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Control Room

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Recovery/re-entry discussions continue.

Actions Expected:

- 1) The EOF and TSC should be discussing actions to cooldown and depressurize the Reactor coolant system. This could include the following:
- A) use of the RHR system
 - B) continue with the injection mode and then switch over to recirculation mode when required.
- These discussions could conclude that a large amount of radioactive water will be brought into the Auxiliary Building using either of the above methods. These discussions could also conclude that it may be better to go on RHR as there are two RHR pumps available when on RHR but only one RHR pump available for the recirculation mode because of the break in the "B" RHR pump suction line from containment.
- 2) The EOF and TSC should be discussing bringing in and hooking up a spare transformer to place 480 volt Bus #16 back on offsite power to allow shutting down the "B" Emergency Diesel Generator.
- 3) The EOF and TSC should be discussing what inspections should be performed because of the earthquake, to ensure long term cooling of the core.
- 4) The Engineering Support Center should be calculating an estimate of the core damage involved.
- 5) As plant conditions improve the EOF and TSC should evaluate the possibility of reducing the classification per SC-110 (Ginna Station Event Evaluation for reducing the classification).
- 6) The EOF and TSC should be looking ahead to the long term recovery phase per step 3.16 of the Corporate Recovery Managers checklist.



1987 EVALUATED EXERCISE

Time: 0915MAJOR PARAMETERS

Reactor Power Level	<u>0</u> MWE/ <u>0</u> MWT
Reactor Shutdown	<u>(Yes)</u> /No
NIS	N-31: <u>8X10' cps</u> N-35: <u><10" amps</u>
NIS	N-32: <u>8X10' cps</u> N-36: <u><10" amps</u>
RCS Pressure	<u>200</u> psig
RCS Temperature Tc	<u>344</u> °F
CHG. (FI-128)	<u>0</u> GPM
Pressurizer Level	<u>15</u> %
LTN. (FI-134)	<u>0</u> GPM
Containment Pressure	<u>2</u> psig
1A S/G Level	<u>0</u> %
1B S/G Level	<u>50</u> %
RVLIS	<u>100</u> %
1A S/G Pressure	<u>0</u> psig
1B S/G Pressure	<u>415</u> psig
*CET	<u>354</u> °F
Sump A Level	<u>31</u> feet
Sump B Level	<u>113</u> inches
A RCP	<u>Running/Stopped</u>
B RCP	<u>Running/Stopped</u>

Containment Isolation (Yes)/NoELECTRICAL POWER

34.5 KV Bus	<u>(Energized)</u> /Deenergized
4 KV Buses	<u>(Energized)</u> /Deenergized

480 V Buses	<u>(Energized)</u> /Deenergized
Turbine Generator	<u>Energized/Deenergized</u>

DIESEL GENERATORS

A.	<u>(Running)</u> /Unloaded/STBY/OOS
B.	<u>(Running)</u> /Unloaded/STBY/OOS
TSC	<u>(Running)</u> /Unloaded/STBY/OOS
Security	<u>(Running)</u> /Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A.	<u>InServ/STBY/OOS</u>
1B.	<u>InServ/STBY/OOS</u>
Turb. Driven	<u>InServ/STBY/OOS</u>
CST Level	<u>19</u> feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924	<u>450</u> GPM
FI-925	<u>370</u> GPM
1A.	<u>(InServ)</u> /STBY/OOS
1B.	<u>(InServ)</u> /STBY/OOS
1C.	<u>(InServ)</u> /STBY/OOS
BAST Level	= <u>55</u> %

Low Head S. I. Pumps

FI-626	<u>0</u> GPM
1A.	<u>InServ/STBY/OOS</u>
1B.	<u>InServ/STBY/OOS</u>

RWST Level = 45 %Containment Spray Pumps

FI-931A	<u>0</u> GPM
FI-931B	<u>0</u> GPM
1A.	<u>InServ/STBY/OOS</u>
1B.	<u>(InServ)</u> /STBY/OOS

NaOH Tank Level = 70 %Containment Recirc Fans

1A.	<u>(InServ)</u> /STBY/OOS
1B.	<u>(InServ)</u> /STBY/OOS
1C.	<u>(InServ)</u> /STBY/OOS
1D.	<u>(InServ)</u> /STBY/OOS

PostAccident Dampers Open/ClosedService Water Pumps

1A.	<u>(InServ)</u> /STBY/OOS
1B.	<u>(InServ)</u> /STBY/OOS
1C.	<u>(InServ)</u> /STBY/OOS
1D.	<u>(InServ)</u> /STBY/OOS

A&B Header Pressure 50 psigComponent Cooling Water Pumps

1A.	<u>(InServ)</u> /STBY/OOS
1B.	<u>InServ/STBY/OOS</u>

Surge Tank Level = 52 %Standby Aux. Feedwater Pumps

1C.	<u>InServ/STBY/OOS</u>
1D.	<u>InServ/STBY/OOS</u>

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)

1987 EVALUATED EXERCISE

Time: 0930MAJOR PARAMETERS

Reactor Power Level 0 MWE/ 0 MWT
 Reactor Shutdown: Yes/No
 NIS: N-31 8X10¹ cps N-35 <10⁻¹¹ amps
 NIS: N-32 8X10¹ cps N-36 <10⁻¹¹ amps
 RCS Pressure 2.00 psig
 RCS Temperature 334 °F
 CHG. (FI-128) 0 GPM
 Pressurizer Level 25 %
 LTN. (FI-134) 0 GPM
 Containment Pressure 1 psig
 1A S/G Level 0 %
 1B S/G Level 50 %
 RVLIS: 100 %
 1A S/G Pressure 0 psig
 1B S/G Pressure 405 psig
 *CET 344 °F
 Sump A Level 31 feet
 Sump B Level 113 inches
 A RCP Running/Stopped
 B RCP Running/Stopped

Containment Isolation Yes/NoELECTRICAL POWER

34.5 KV Bus Energized/Deenergized
 4 KV Buses Energized/Deenergized

480 V Buses Energized/Deenergized
 Turbine Generator Energized/Deenergized

DIESEL GENERATORS

A. Running/Unloaded/STBY/OOS
 B. Running/Unloaded/STBY/OOS
 TSC Running/Unloaded/STBY/OOS
 Security Running/Unloaded/STBY/OOS

ENGINEERED SAFEGUARDSAux. Feedwater Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 Turb. Driven InServ/STBY/OOS
 CST Level 19.5 feet

ENGINEERED SAFEGUARDSHigh Head S. I. Pumps

FI-924 450 GPM
 FI-925 370 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 BAST Level = 55 %

Low Head S. I. Pumps

FI-626 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

RWST Level = 37 %Containment Spray Pumps

FI-931A 0 GPM
 FI-931B 0 GPM
 1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 NaOH Tank Level = 65 %

Containment Recirc Fans

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

PostAccident Dampers Open/ClosedService Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS
 1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

A&B Header Pressure 50 psigComponent Cooling Water Pumps

1A. InServ/STBY/OOS
 1B. InServ/STBY/OOS

Surge Tank Level = 52 %Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
 1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



Time: 0945Message: 53GINNA STATION1987 EVALUATED EXERCISEMESSAGE FORMMessage for: Control RoomSimulated Plant Conditions: See attached sheetsMessage: ***THIS IS AN EXERCISE***FOR CONTROLLER USE ONLYController Notes:

- 1) Recovery/re-entry discussions continue.

Actions Expected:

- 1) The EOF and TSC should be discussing actions to cooldown and depressurize the Reactor coolant system. This could include the following:
 - A) use of the RHR system
 - B) continue with the injection mode and then switch over to recirculation made when required.These discussions could conclude that a large amount of radioactive water will be brought into the Auxiliary Building using either of the above methods. These discussions could also conclude that it may be better to go on RHR as there are two RHR pumps available when on RHR but only one RHR pump available for the recirculation mode because of the break in the "B" RHR pump suction line from containment.
- 2) The EOF and TSC should be discussing bringing in and hooking up a spare transformer to place 480 volt Bus #16 back on offsite power to allow shutting down the "B" Emergency Diesel Generator.
- 3) The EOF and TSC should be discussing what inspections should be performed because of the earthquake, to ensure long term cooling of the core.
- 4) The Engineering Support Center should be calculating an estimate of the core damage involved.
- 5) As plant conditions improve the EOF and TSC should evaluate the possibility of reducing the classification per SC-110 (Ginna Station Event Evaluation for reducing the classification).
- 6) The EOF and TSC should be looking ahead to the long term recovery phase per step 3.16 of the Corporate Recovery Managers checklist.

1987 EVALUATED EXERCISE

Time: 0945

MAJOR PARAMETERS

Reactor Power Level	<u>0</u> MWE/ <u>0</u> MWT
Reactor Shutdown	<u>(Yes/No)</u>
NIS	N-31: <u>8x10¹ CPS</u> N-35: <u><10¹ AMPS</u>
NIS	N-32: <u>8x10¹ CPS</u> N-36: <u><10¹ AMPS</u>
RCS Pressure	<u>250</u> psig
RCS Temperature T _c	<u>324</u> °F
CHG. (FI-128)	<u>0</u> GPM
Pressurizer Level	<u>51</u> %
LTN. (FI-134)	<u>0</u> GPM
Containment Pressure	<u>0.5</u> psig
1A S/G Level	<u>0</u> %
1B S/G Level	<u>50</u> %
RVLIS	<u>100</u> %
1A S/G Pressure	<u>0</u> psig
1B S/G Pressure	<u>395</u> psig
*CET	<u>334</u> °F
Sump A Level	<u>31</u> feet
Sump B Level	<u>113</u> inches
A RCP	<u>Running/Stopped</u>
B RCP	<u>Running/Stopped</u>

Containment Isolation (Yes/No)

ELECTRICAL POWER

34.5 KV Bus (Energized/Deenergized)
4 KV Buses (Energized/Deenergized)

480 V Buses (Energized/Deenergized)
Turbine Generator (Energized/Deenergized)

DIESEL GENERATORS

A. (Running/Unloaded/STBY/OOS)
B. (Running/Unloaded/STBY/OOS)
TSC (Running/Unloaded/STBY/OOS)
Security (Running/Unloaded/STBY/OOS)

ENGINEERED SAFEGUARDS

Aux. Feedwater Pumps

1A. InServ/STBY/OOS
1B. InServ/STBY/OOS
Turb. Driven InServ/STBY/OOS
CST Level 19.5 feet

ENGINEERED SAFEGUARDS

High Head S. I. Pumps

FI-924 450 GPM
FI-925 370 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
BAST Level = 53 %

Low Head S. I. Pumps

FI-626 0 GPM
1A. InServ/STBY/OOS
1B. InServ/STBY/OOS

RWST Level = 30 %

Containment Spray Pumps

FI-931A 0 GPM
FI-931B 0 GPM
1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
NaOH Tank Level = 60 %

Containment Recirc Fans

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

PostAccident Dampers (Open/Closed)

Service Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)
1C. (InServ/STBY/OOS)
1D. (InServ/STBY/OOS)

A&B Header Pressure 50 psig

Component Cooling Water Pumps

1A. (InServ/STBY/OOS)
1B. (InServ/STBY/OOS)

Surge Tank Level = 52 %

Standby Aux. Feedwater Pumps

1C. InServ/STBY/OOS
1D. InServ/STBY/OOS

*CET = PREDETERMINED CORE EXIT THERMOCOUPLES, (5 OR MORE)



Approximately
Time: 1000

Message: 54X

GINNA STATION

1987 EVALUATED EXERCISE

MESSAGE FORM

Message for: Emergency Coordinator and Recovery Manager

Simulated Plant Conditions: See attached sheets

Message: ***THIS IS AN EXERCISE***

The Exercise is Terminated.

FOR CONTROLLER USE ONLY

Controller Notes:

- 1) Deliver when all exercise objectives have been demonstrated.

Actions Expected:

- 1) Close out by making an announcement that the Plume Exposure Exercise is terminated.
- 2) Also announce that those participants who will be playing the Ingestion Pathway Exercise should remain.

SECTION 9.0

ONSITE RADIOLOGICAL AND CHEMISTRY DATA

SECTION 9.1

RADIOLOGICAL SUMMARY

ON SITE RADIOLOGICAL



9.1 Radiological Summary

A. Source Term

The radiological source term assumed for this scenario was selected to include sufficient radioiodine to achieve offsite deposition levels which exceed derived FDA Preventive and Emergency Protective Action Guides (PAG's) for soil, pasture grass and cow's milk. The Emergency PAG's for the milk pathway are exceeded out to approximately 12 miles downwind from the Ginna Plant. The Preventive PAG's for the milk pathway are exceeded out to approximately 30 miles downwind. Deposition radioactivity diminishes to background levels at or beyond 50 miles from the plant.

In addition, the postulated reactor accident is assumed to result in the release of particulates which also will ultimately enter various food and water pathways.

Immediate protective action recommendations (e.g., sheltering, evacuation) may not be necessarily based upon projected child thyroid dose, due to the predominance of release noble gas quantities. (SEE FIGURE 9.1). The noble gas-to-radioiodine ratio assumed in this scenario is approximately 3300:1. An isotopic breakdown of assumed noble gas, radioiodine and particulate release quantities is provided in Table 9.1.

B. Integrated Offsite Doses Due to Plume Exposure

The downwind integrated doses from the 1.25-hour scenario release are as follows:

Whole Body Dose (at 5 miles) = 1.28 REM

Child Thyroid Dose (at 5 miles) = 0.48 REM



TABLE 9.1

The assumed release quantities for the Ginna Exercise Scenario are summarized as follows:

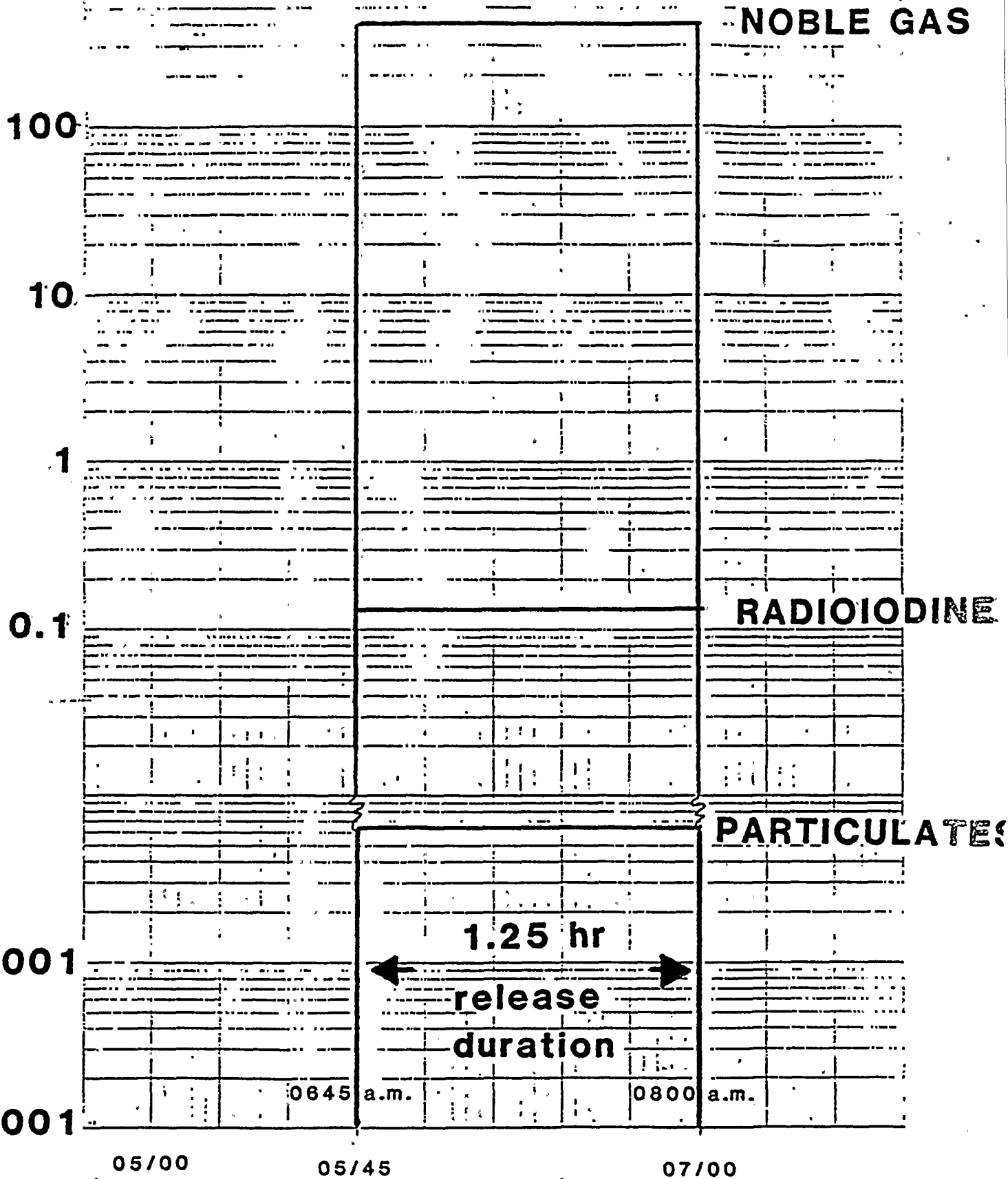
<u>NUCLIDE</u>	<u>CURIE/SEC</u>	<u>TOTAL CURIES RELEASED</u>
Kr-85	2.26 E-01	1.02 E+03
Kr-85m	2.40 E+01	1.08 E+05
Kr-87	4.00 E+01	1.80 E+05
Kr-88	6.00 E+01	2.70 E+05
Xe-131m	6.55 E-01	2.95 E+03
Xe-133	2.04 E+02	9.18 E+05
Xe-133m	3.20 E+01	1.44 E+05
Xe-135	4.00 E+01	1.80 E+05
Total Noble Gas	4.0 E+02	1.8 E+06
I-131	1.80 E-02	8.10 E+01
I-132	2.59 E-02	1.17 E+02
I-133	3.60 E-02	1.62 E+02
I-134	8.10 E-03	3.65 E+01
I-135	3.26 E-02	1.47 E+02
Total Iodines	1.2 E-01	5.4 E+02
Rb-88	6.00 E+01	2.70 E+05
Cs-134	4.32 E-05	1.94 E-01
Cs-137	1.98 E-05	8.91 E-02
Sr-89	4.68 E-08	2.11 E-04
Sr-90	4.32 E-08	1.94 E-04
Ba-140	1.01 E-06	4.54 E-03
La-140	1.01 E-06	4.54 E-03
Total Long-Lived Particulates	6.5 E-05	2.9 E-01



FIGURE 9.1

SCENARIO SOURCE TERM

CI/SEC



SCENARIO TIME



TABLE 9.2
PLANT VENT SAMPLE ANALYSIS
(T = 0645 - 0800)

<u>NUCLIDE **</u>	<u>CONCENTRATION ** (UCI/CC)</u>
KR-85	6.22 E-03
KR-85M	6.20 E-01
KR-87	1.14 E+00
KR-88	1.66 E+00
XE-131M	1.80 E-02
XE-133	5.68 E+00
XE-133M	8.29 E-01
XE-135	1.09 E+00
XE-135M	5.00 E-04
 TOTAL NOBLE GAS	 1.10 E+01
 I-131	 5.03 E-04
I-132	7.23 E-04
I-133	1.01 E-03
I-134	2.26 E-04
I-135	9.11 E-04
 TOTAL RADIOIODINE	 3.37 E-03
RB-88	1.66 E+00
CS-134	1.21 E-06
CS-137	5.53 E-07
Ba-140	2.82 E-08
La-140	2.80 E-08
 TOTAL LONG LIVED PARTICULATE	 1.82 E-06

** Data to be provided to HP/Chemistry and Dose Assessment personnel in accordance with Exercise ground rules.



SECTION 9.2

IN-PLANT RADIOLOGICAL DATA MAPS





$$*D = 2500 \text{ NR/KR}$$

* NOTE: PLANT VENT READING.
= 10,000 NR/HK @ 1 FT

TOP FLOOR

RG&E

GINNA STATION

INTERMEDIATE BUILDING SURVEY MAP

OPERATING FLOOR

Spring Unit

LLD= SMEARS

#:	DPM/100 Cm ²
	AREAS C and D:
	1500
	AREAS A and B:
	500
	AIRBORNE (uCi/c):
	IODINE: 1E-7
	PART: 1E-5

DATE: DAY 1

TIME: 0646-0800

BY:

INSTRUMENT:

SERIAL #:

SURVEY METER

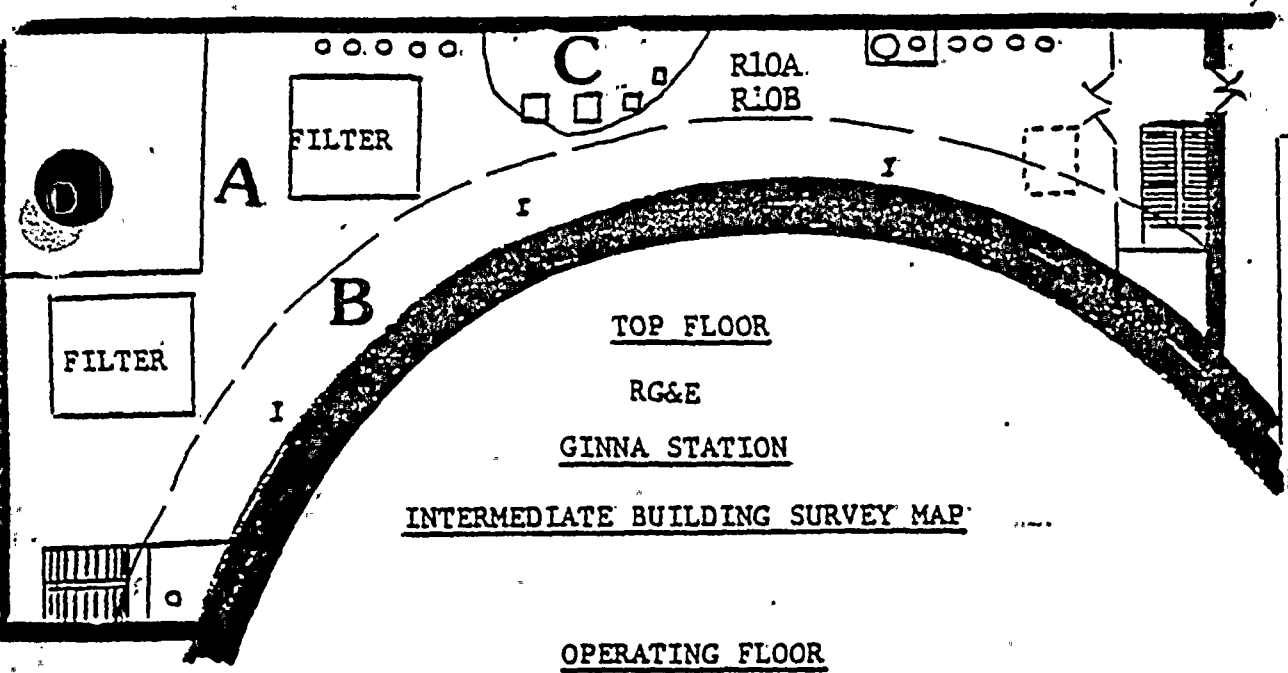
SERIAL #

ALL READINGS IN MR/HR UNLESS
OTHERWISE NOTED

REMARKS:



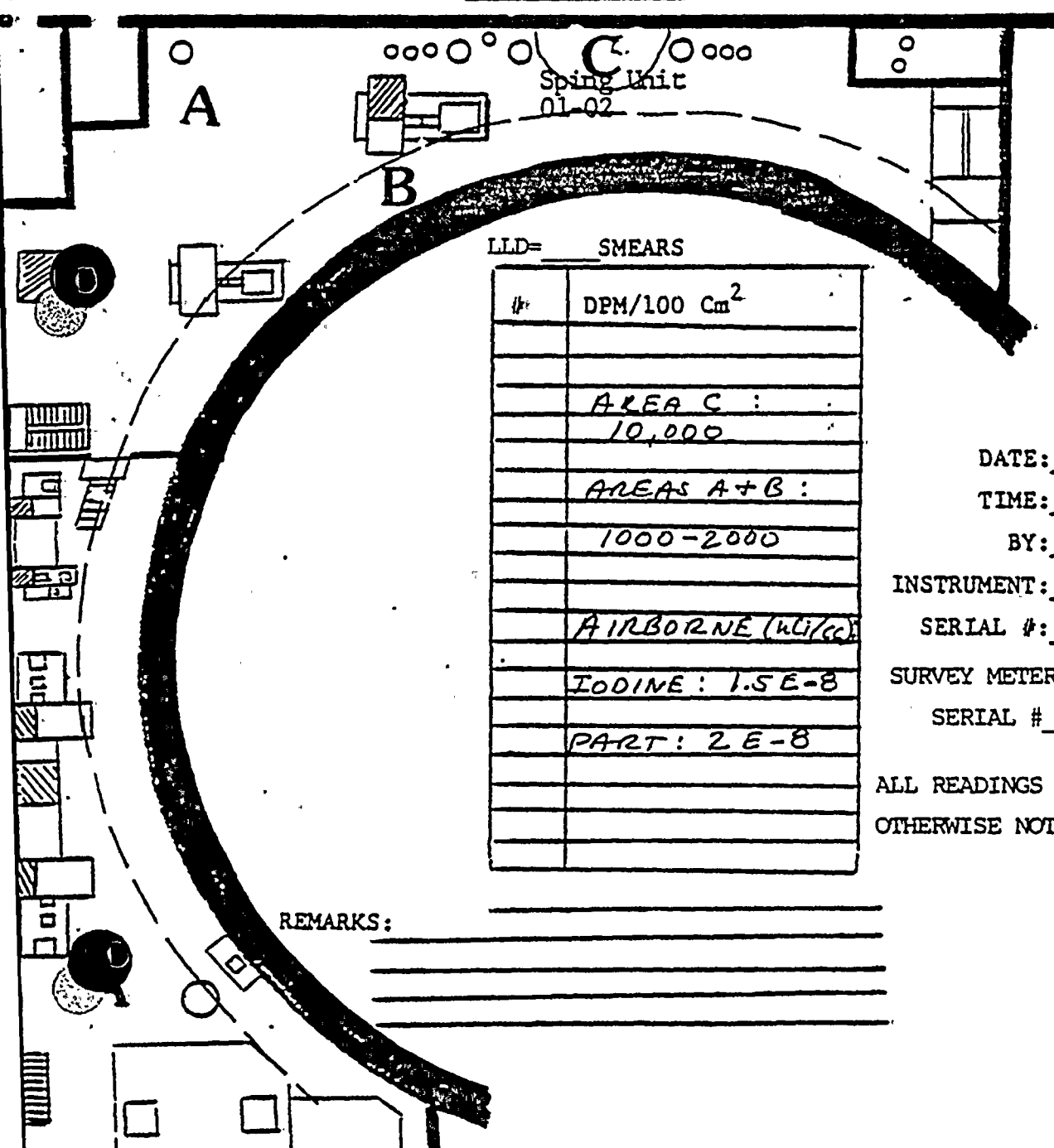
300



A = 5 MR/HR
B = 15 MR/HR
C = 40 MR/HR

INTERMEDIATE BUILDING SURVEY MAP

OPERATING FLOOR



LLD= SMEARS

hr	DPM/100 Cm ²
	AREA C :
	10,000
	AREAS A+B :
	1000-2000
	AIRBORNE (uCi/cc)
	IODINE: 1.5E-8
	PART: 2E-8

DATE: DAY 1

TIME: 0801-1000

BY: _____

INSTRUMENT: _____

SERIAL #: _____

SURVEY METER _____

SERIAL # _____

ALL READINGS IN MR/HR UNLESS
OTHERWISE NOTED

REMARKS: _____

SURVEY MAP

$$B = 10 \text{ MR/HR}$$


DATE: DAY 1
TIME: 0100-0530 HR
BY:
FROM:
CAL #:

SURVEY METER _____
SERIAL # _____

ALL READINGS IN MR/HR UNLESS
OTHERWISE NOTED

#

DPM/100 cm^2

ALL AREAS

2250 -

AIRBORNE (uCi/cc):

IODINE: $1.5 \text{E}-10$

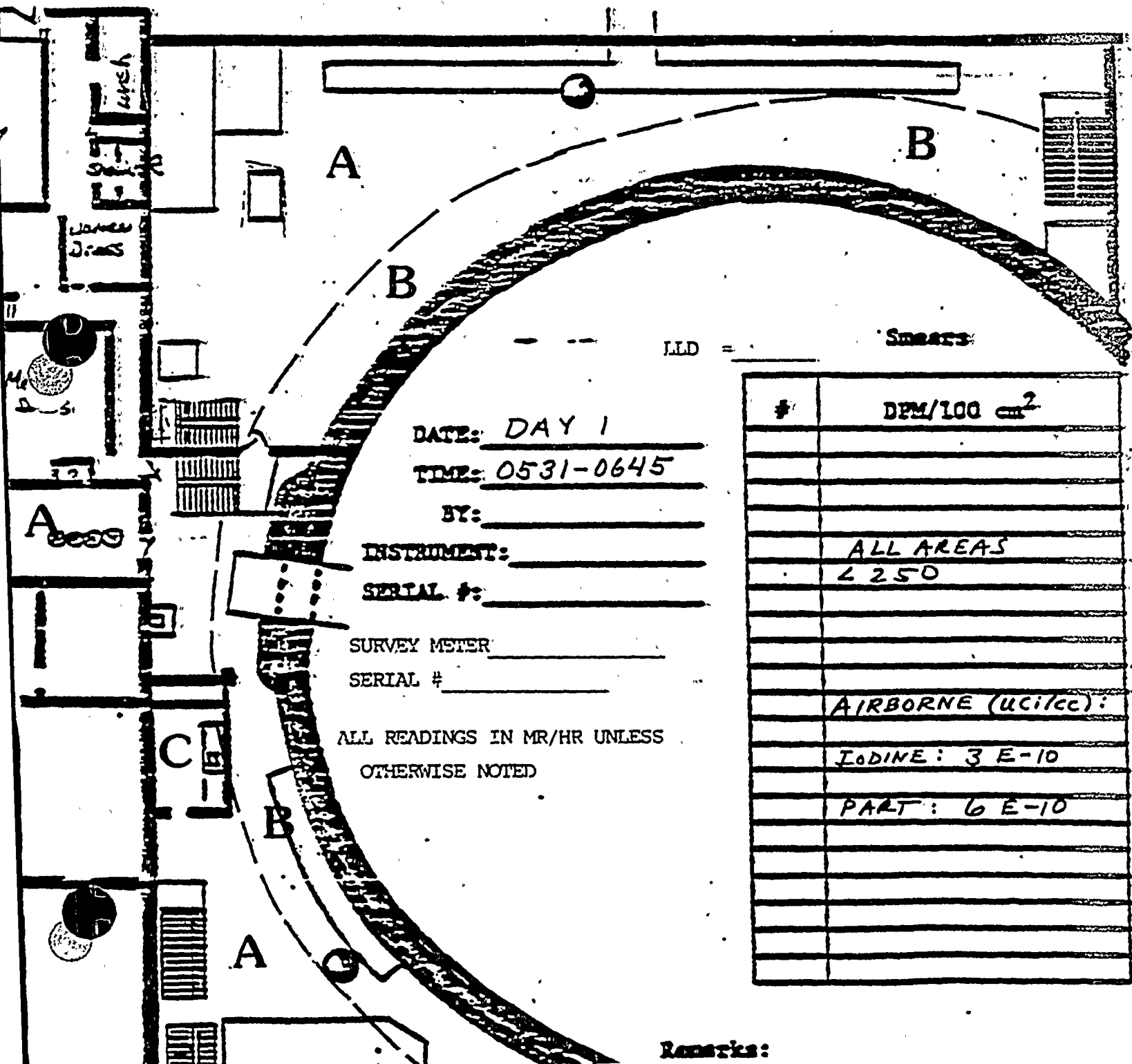
PART: $2.0 \text{E}-10$

Resposta:

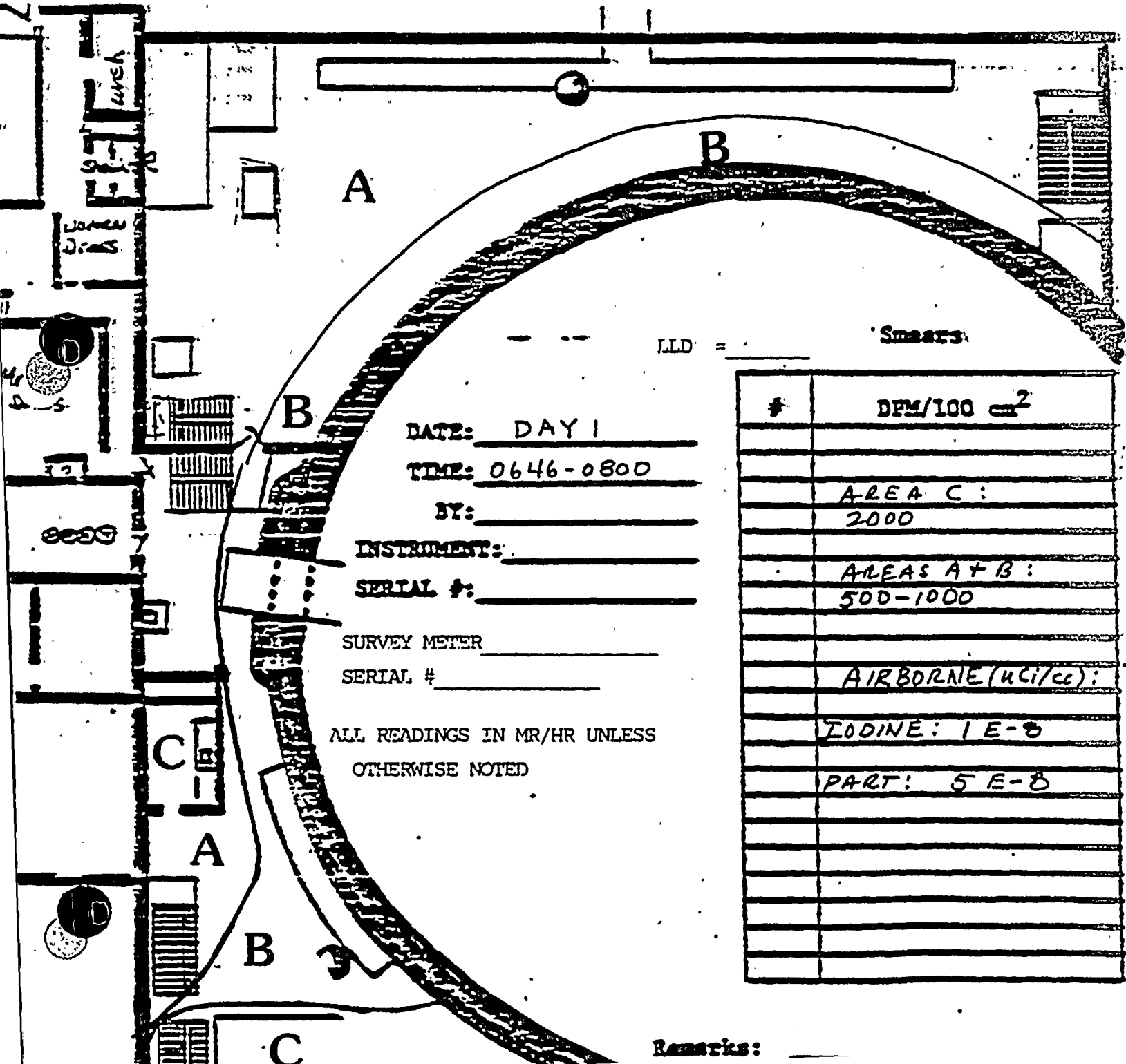


305

SURVEY MAP

$$C = 12 \text{ MR/HR}$$


SURVEY MAP

$$C = 50 \text{ MR/Hz}$$




SURVEY MAP

$$C = 50 \text{ MR/HR}$$


DATE: DAY 1

TIME: 0801 - 1000

BY:

INSTRUMENT:

SERIAL #:

SURVEY METER

SERIAL #

ALL READINGS IN MR/HR UNLESS
OTHERWISE NOTED

[illegible]

Summary:

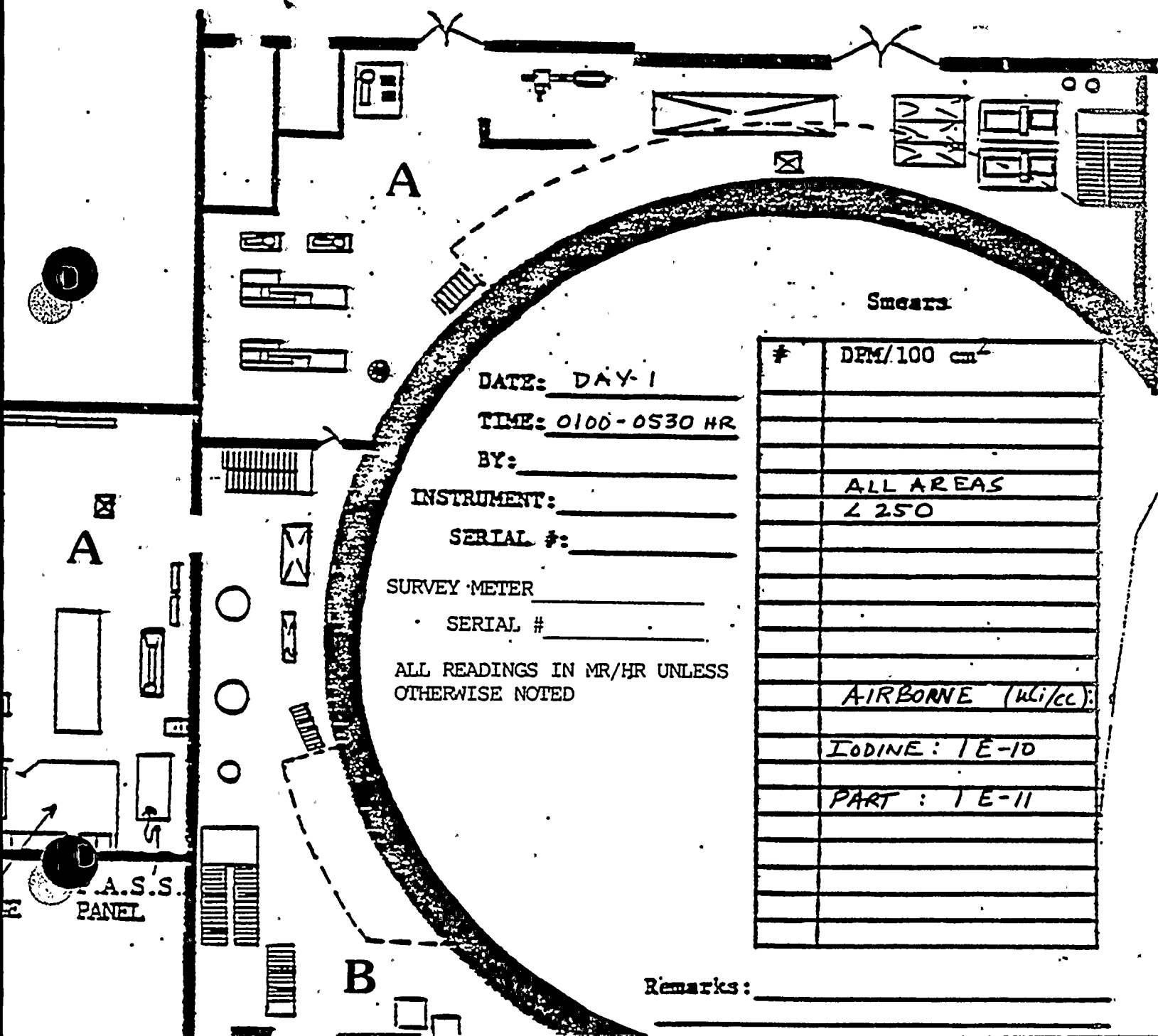


305

INTERMEDIATE BUILDING BASEMENT FLOOR

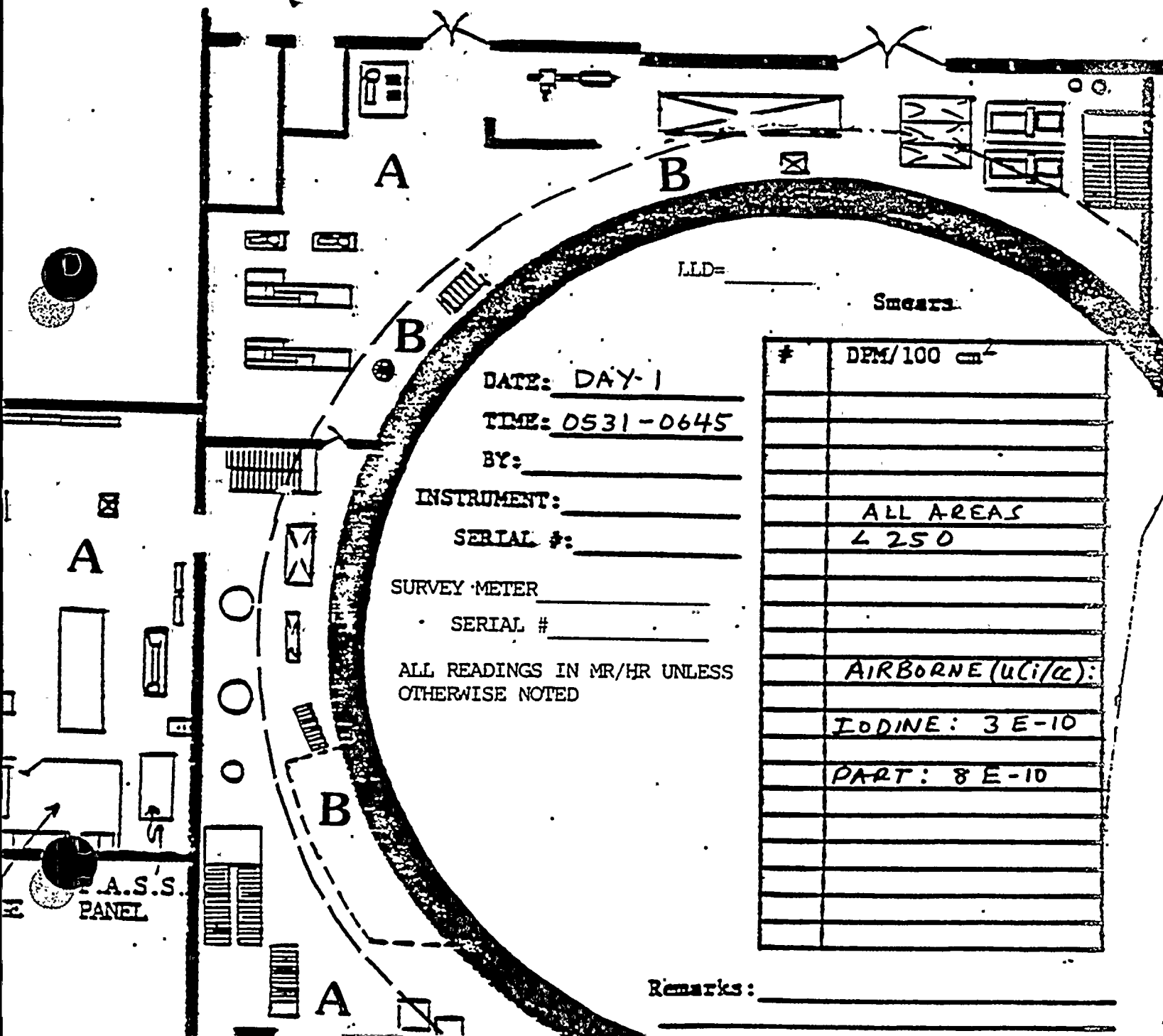
$$A = 0.05 \text{ MR/HR}$$

B = 0.5 MR/HR



INTERMEDIATE BUILDING BASEMENT FLOOR

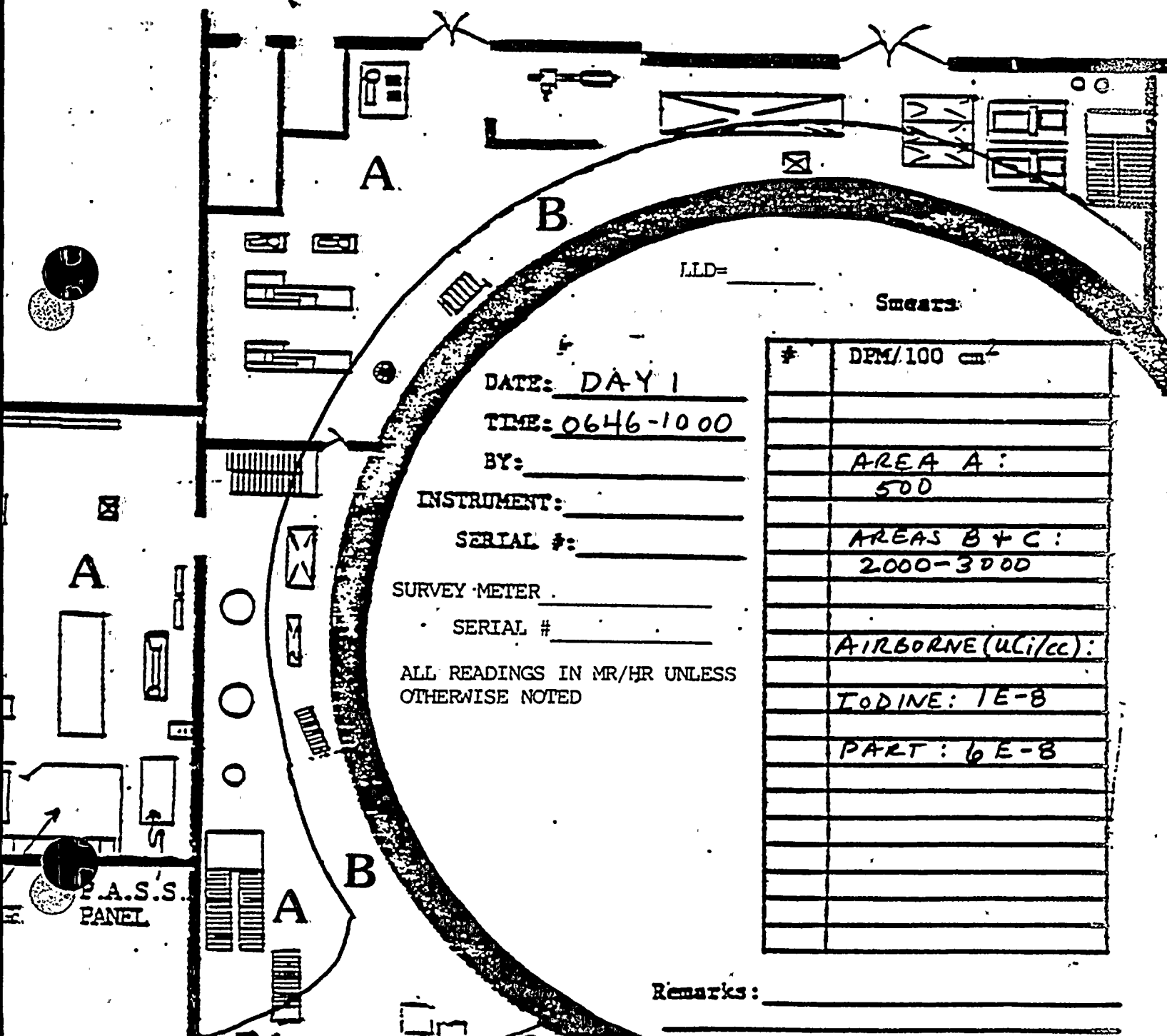
* NO PASS OPERATION *

$$B_i = 1.5 \text{ MR/HR}$$


INTERMEDIATE BUILDING BASEMENT FLOOR

$$\begin{aligned} A &= 5 \text{ MR/HR} \\ B &= 30 \text{ MR/HR} \\ C &= 40 \text{ MR/HR} \end{aligned}$$

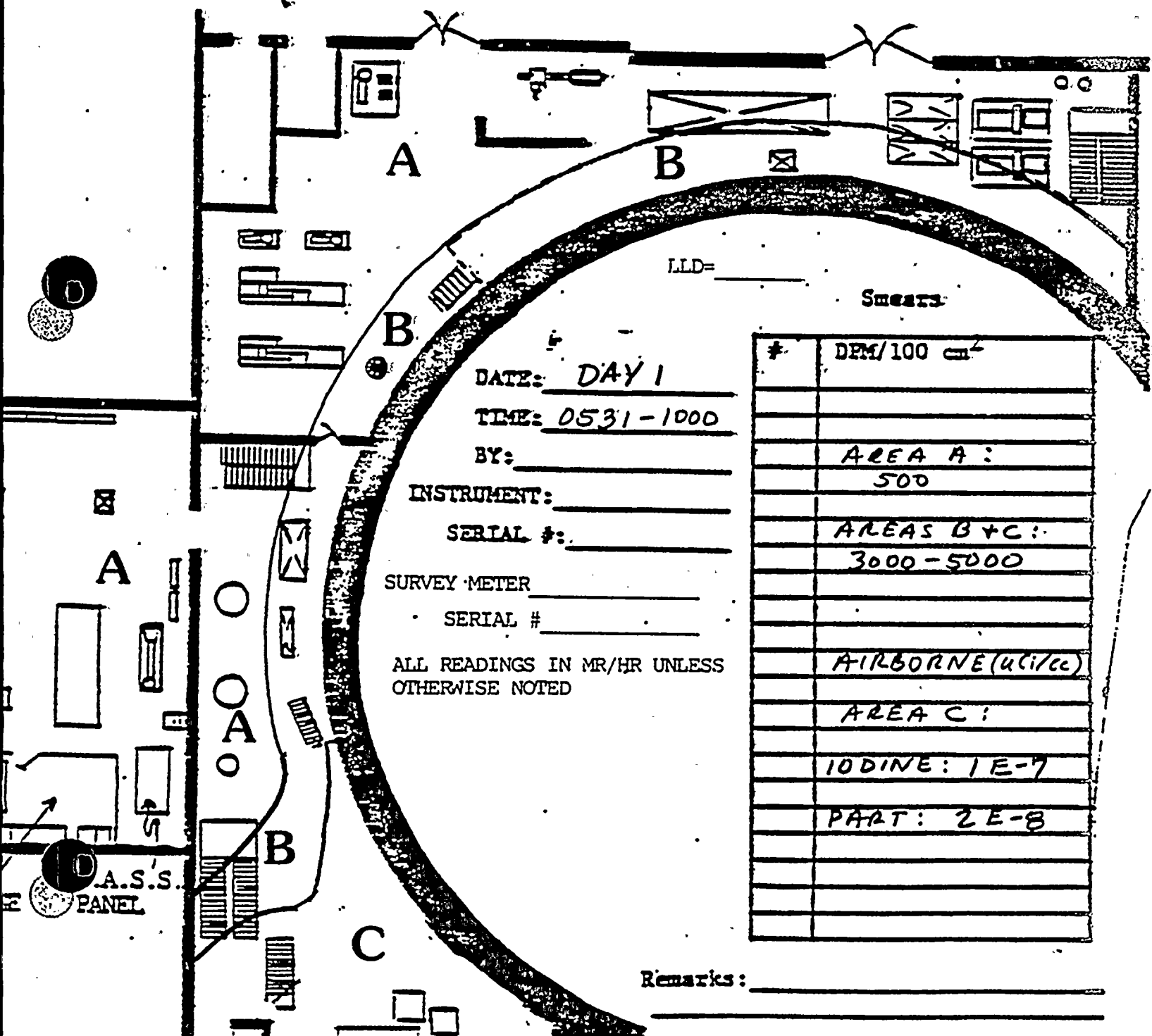
* NO. PASS OPERATION *





INTERMEDIATE BUILDING BASEMENT FLOOR

**** DURING PASS OPERATION ****

$$C = 200 \text{ MR/HR}$$


R.G. & E. CORPORATION
GINNA STATION
AUXILIARY BUILDING OPER.
FLOOR SURVEY MAP

All readings in MR/HR:
unless otherwise noted.

Date: DAY 1 (0100-0530 hr)

Instrument: _____

Survey done by: _____

①'s are SMEAR locations.

$$A = 3 \text{ m}^2/\text{hr}$$

SMEARS

[illegible]

REMARKS:

REMARKS:



911

$$A = 70,000 \text{ MK/HK}$$
[illegible]

AIRBORNE:
(uCi/cc) - -

IODINE :
1 E-2

PART:
1.5 E+0

REMARKS:



R.G. & E. CORPORATION
GINNA STATION
AUXILIARY BUILDING OPER.
FLOOR SURVEY MAP

All readings in MR/HR:
unless otherwise noted.

Date: DAY 1 (0801-1000 Hr)

Time: _____ % Power: _____

Instrument: 1

Survey done by: _____

④'s are SMEAR locations.

$$A = 75 \text{ mR/hr}$$

SMEARS

[illegible]

AIRBORNE:
(WLi/CC) -

IODINE:
5 E-7

PART 5:
1 E-6

REMARKS:



Time: _____ % Power: _____
Instrument: _____ #

SMEARS

[illegible]

REMARKS:

AIRBORNE (KCI/cc) :

IODINE:

1 E-10

PART:

2E-10

UPPER CATWALK AREA BE



Time: _____ % Power: _____
Instrument: _____ # _____

$$B_1 = 10 \text{ mN/Hz}$$
[illegible]

UPPER CATWALK AREA BE

All readings in Vol. #2.
unless otherwise noted.

Date: DAY 1 (0801-1000 HZ)

Time: _____ % Power: _____
Instrument: _____ # _____

$$A = 100 \text{ m}\Omega/\text{Hz}$$

SMEARS'

[illegible]

REMARKS:

AIRBORNE (uCi/cc):

IUDINE: 7E-7

PART: 2 E-6

UPPER CATWALK AREA BE



INDICATES GAT



The floor plan shows a complex arrangement of rooms and corridors. Key features include:

- Central Area:** A large circular space labeled 'A' in the center, surrounded by a thick black line.
- Left Side:** A long vertical corridor with several rooms branching off. One room contains a large oval-shaped object, possibly a bathtub or a large sink. Another room has a rectangular object with a circular feature, possibly a stove or a sink.
- Right Side:** A series of rooms and corridors. One room contains a large rectangular object, possibly a table or a desk. Another room has a circular object, possibly a sink or a bathtub.
- Bottom Section:** A large rectangular room labeled 'B' containing several smaller rectangular objects, possibly desks or tables. To the right of this room is a smaller room labeled 'C' containing a circular object.
- Labels:** The letters 'A', 'B', and 'C' are used to label different areas of the plan. 'A' is used in multiple locations, including the central circular area and several rooms. 'B' is used for the large room at the bottom. 'C' is used for the room on the right side.
- Orientation:** A north arrow is located in the top right corner, pointing towards the top right of the page.



$$B = 175,000 \text{ m}^2/\text{hr}$$



 INDICATES GATE



RG&E
GINNA STATION

TURBINE BUILDING OPERATING FLOOR

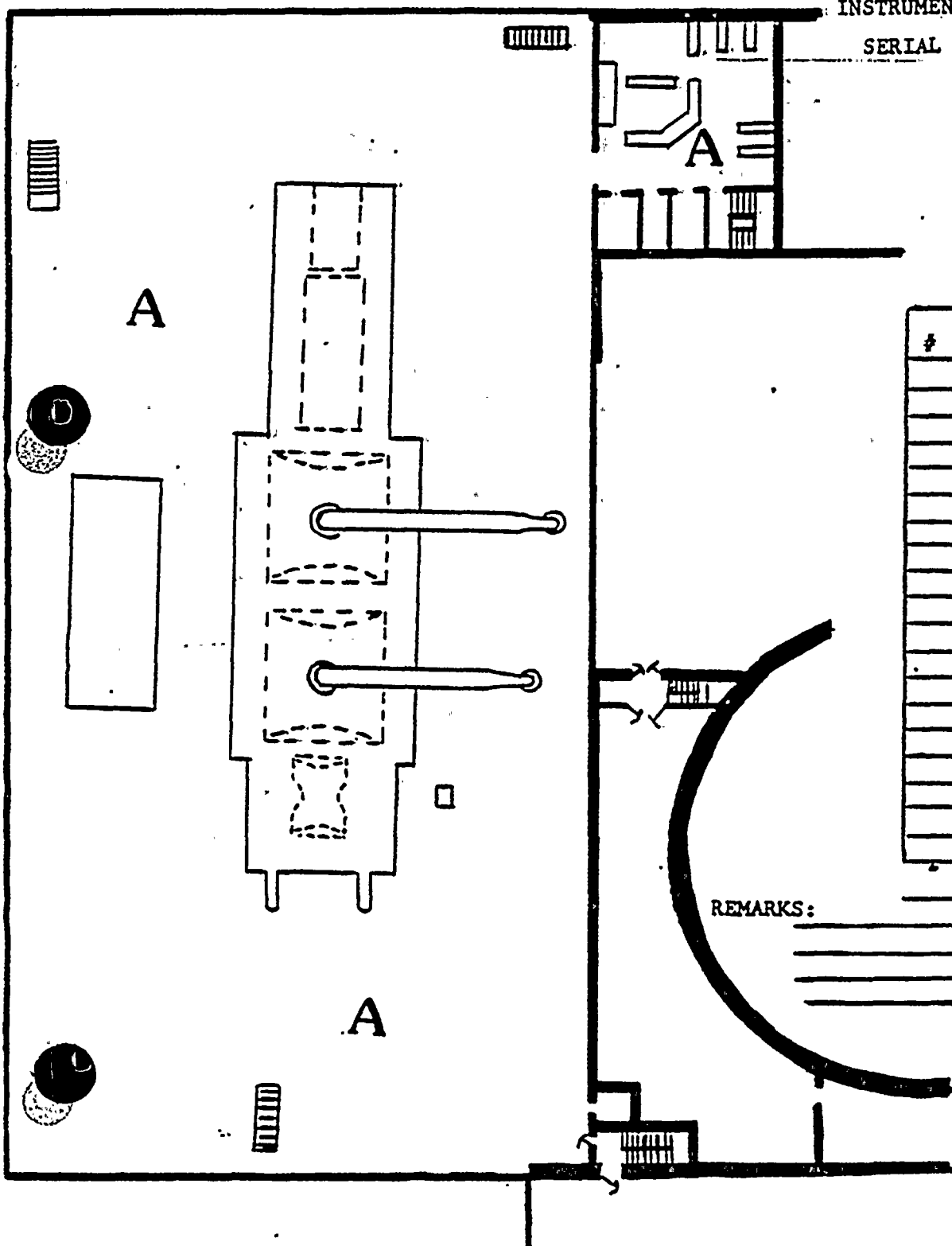
SURVEY MAP

DATE: DAY 1 TIME: 0100 -
POWER: _____ BY: 0645

INSTRUMENT: _____

SERIAL #: _____

NORTH



SMEARS

[illegible]

REMARKS:

REMARKS: AIRBORNE: (uCi/cc)
IODINE = $1E-8$
PACT = $2E-8$

RG&E
GINNA STATION

TURBINE BUILDING MEZZANINE FLOOR

SURVEY MAP

$$A = 0.02 \text{ hr/hr}$$

* ($TSC = 0.02 \text{ mC/hr}$)

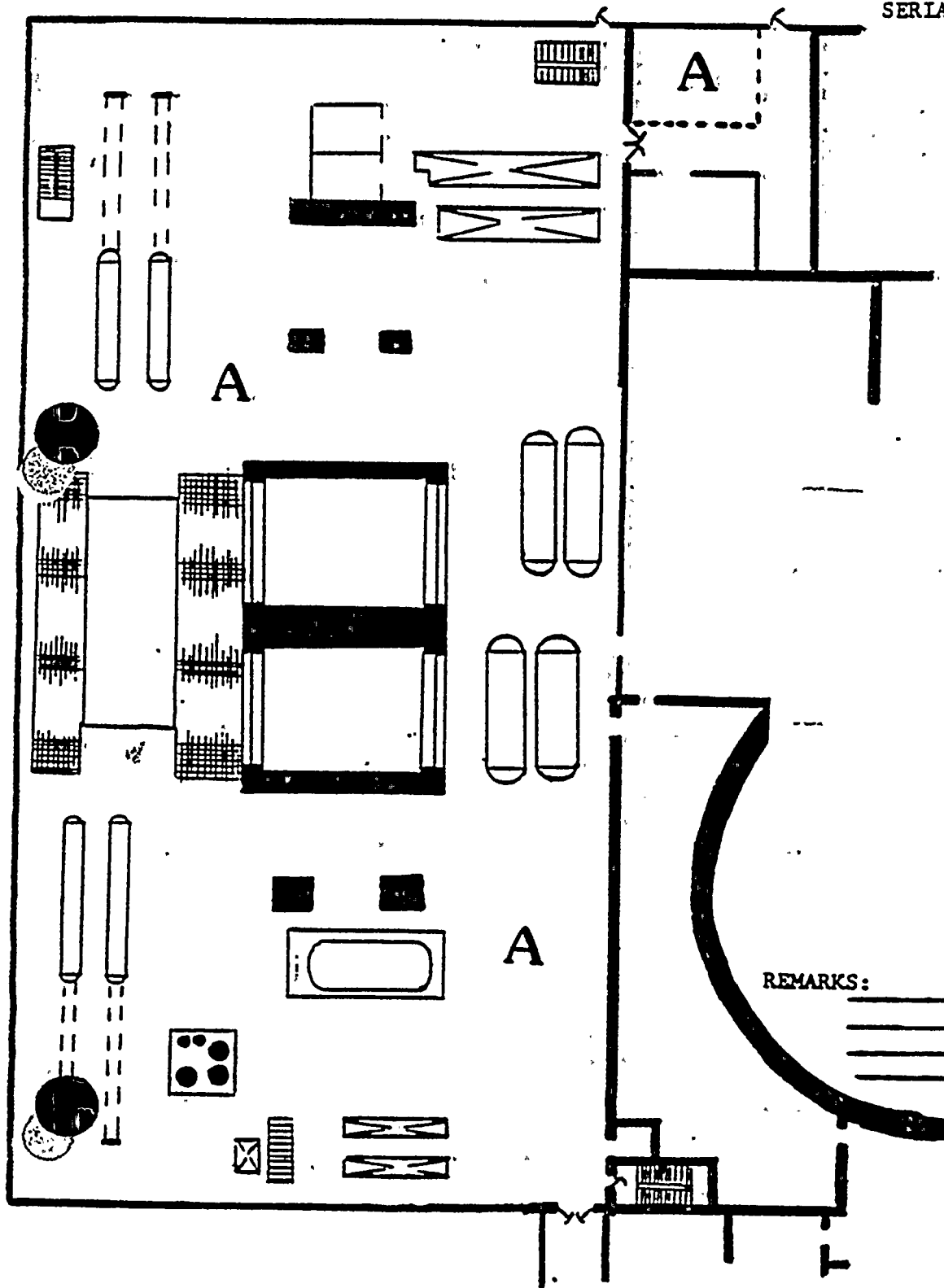
DATE: DAY 1 TIME: 0100 - 0645

POWER: _____ BY: _____

INSTRUMENT: _____

SERIAL. #:

NORTH



SMEARS

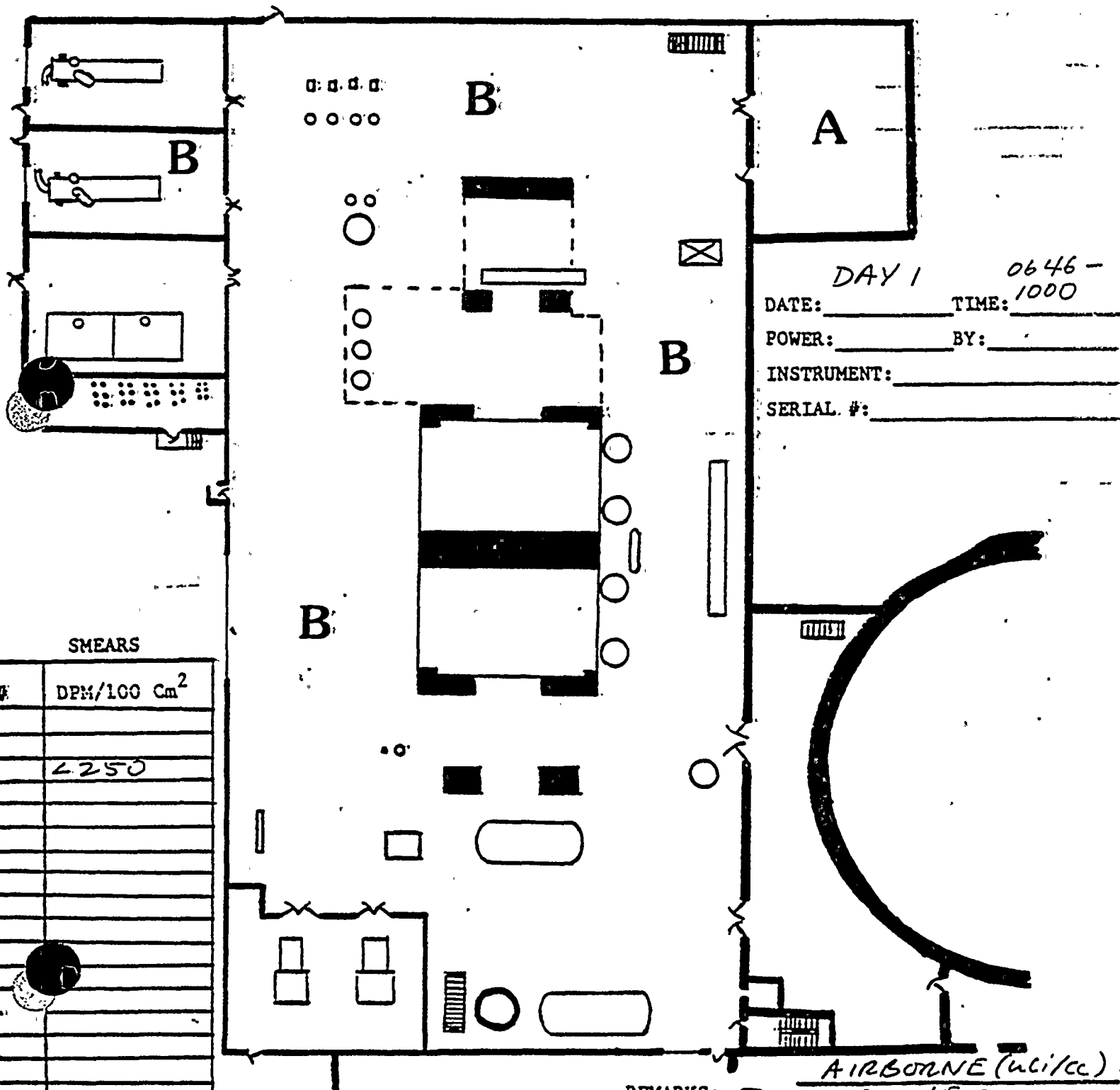
[illegible]

REMARKS:

RG&E
GINNA STATION
TURBINE BUILDING BASEMENT FLOOR
SURVEY MAP

$$B = 10 \text{ mR/hr}$$

NORTH



AIRBORNE (uci/cc):

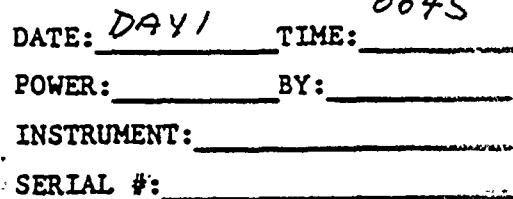
REMARKS: DO DINE: 1E-8

PART : ZE-8

11

$$A = 0.02 \text{ mR/hr}$$

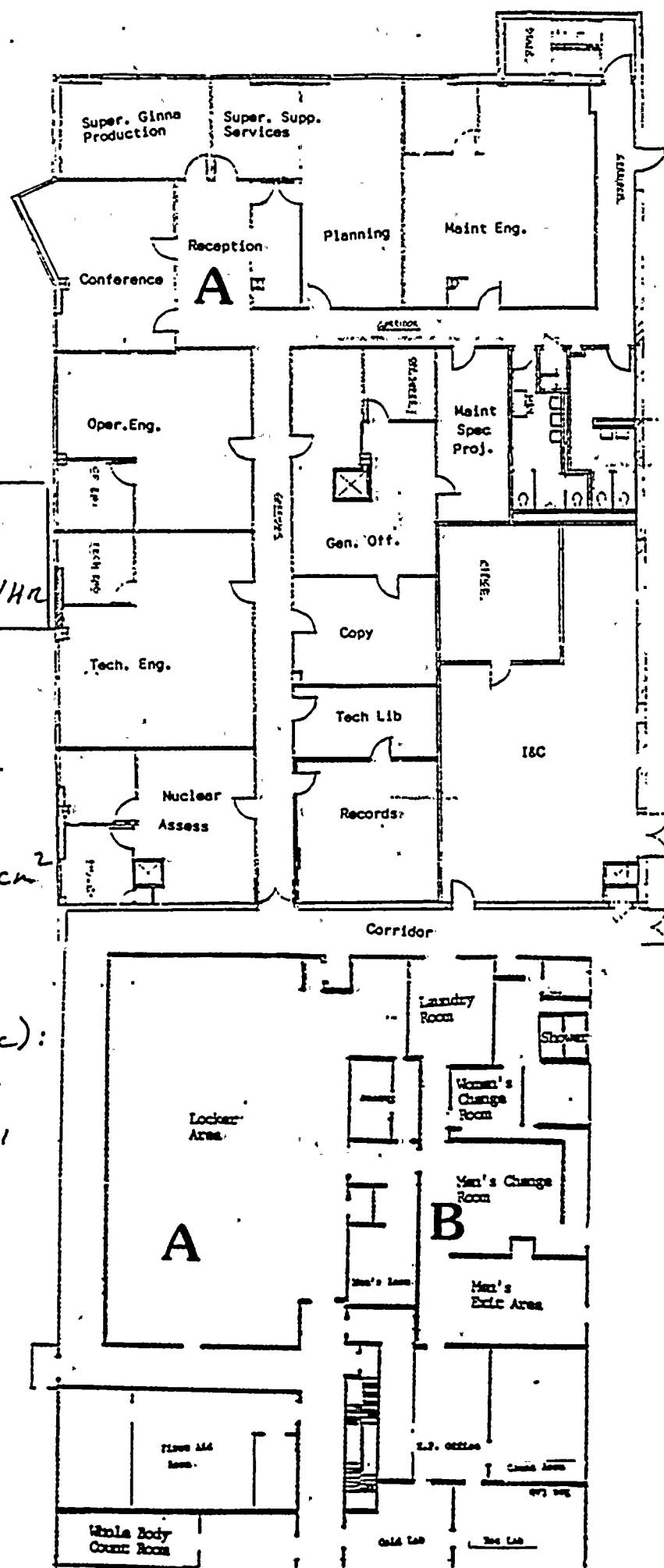
NORTH



REMARKS:



PARTIC: 3 E-8



DAY 1
0100-0645 HR

A = 0.05 MR/HR
B = 0.1-0.5 MR/HR

SMEARS:
ALL AREAS
4250 dpm/100cm²

AIRBORNE (uCi/c):
IODINE: 2E-11
PART: 2E-11



DAY 1

0646-1000 HR

A = 0.1 MR/HR

B = 0.5 MR/HR

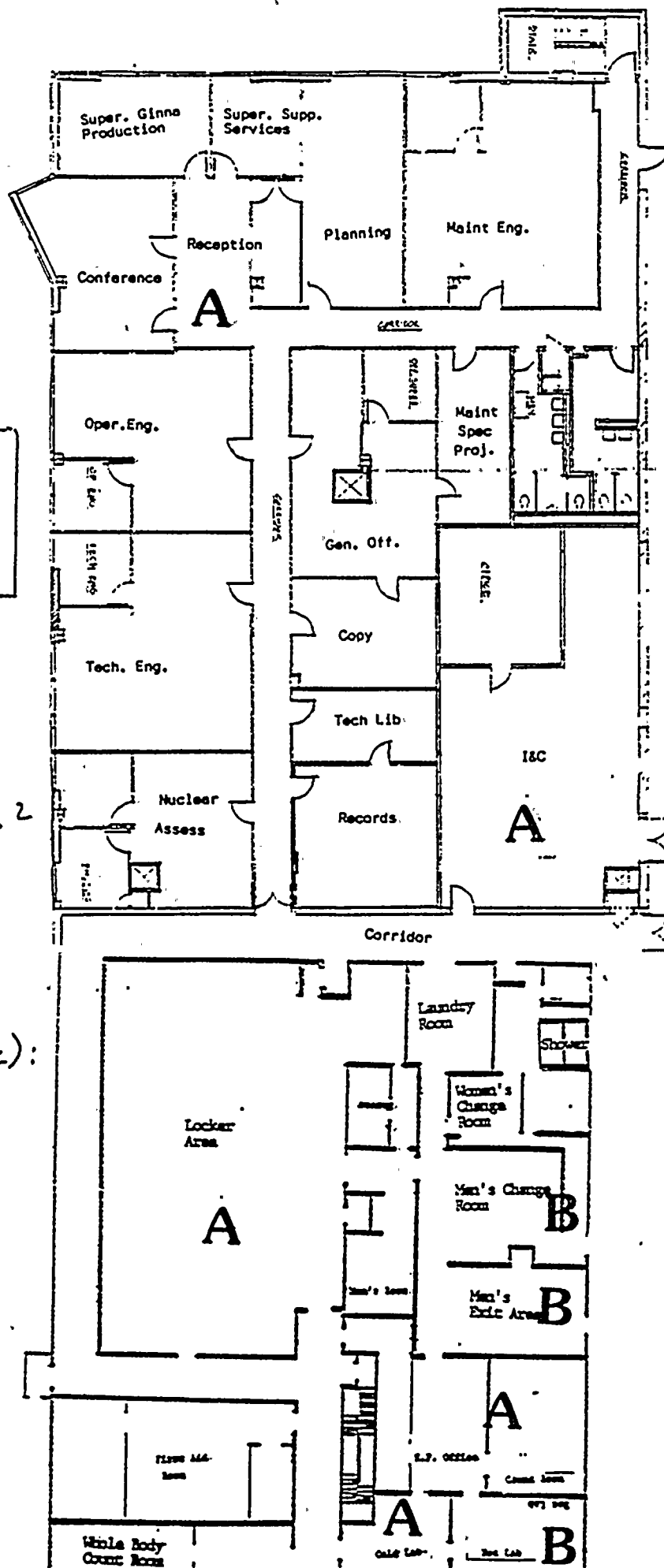
SMEARS:

4250 dpm/100cm²

AIRBORNE (uCi/cc):

IODINE: 2E-9

PART: 3E-9



SECTION 9.3

IN-PLANT AND POST-ACCIDENT SAMPLING RESULTS



TABLE 9.3
EQUILIBRIUM PRIMARY COOLANT ACTIVITY
(As of 0045 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION (uCi/gm)</u>
KR-85	6.22 E-03
KR-85M	3.34 E-02
KR-87	6.20 E-02
KR-88	7.47 E-02
XE-131M	1.80 E-02
XE-133	7.46 E-01
XE-133M	8.29 E-03
XE-135	2.39 E-01
XE-135M	8.43 E-02
XE-138	2.59 E-01
AR-41	8.43 E-02
TOTAL NOBLE GAS	1.62 E+00
I-131	5.76 E-02
I-132	8.16 E-02
I-133	1.15 E-01
I-134	1.25 E-01
I-135	1.01 E-01
TOTAL RADIOIODINE	4.80 E-01
I-131 DOSE EQUIVALENT	8.33 E-02
CR-51	5.80 E-06
MN-54	7.00 E-06
CO-58	1.26 E-05
CO-60	8.00 E-07
CS-134	6.91 E-04
CS-137	1.27 E-03
BA-140	1.66 E-05
TOTAL PARTICULATES	2.00 E-03



TABLE 9.4-APRIMARY COOLANT SYSTEM SAMPLE ACTIVITYGAS COLLECTION BOMB

(Collection Between 0531 - 0630 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
KR-85	1.11 E+01
KR-85M	1.12 E+03
KR-87	1.99 E+03
KR-88	2.93 E+03
XE-131M	3.19 E+01
XE-133	1.02 E+04
XE-133M	1.46 E+03
XE-135	1.91 E+03
XE-135M	1.91 E+01
XE-138	1.15 E+01

TOTAL NOBLE GAS.	2.0 E+04
------------------	----------

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 140 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 160 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ CONTACT = 170 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.4-BPRIMARY COOLANT SYSTEM SAMPLE ACTIVITYGAS COLLECTION BOMB

(Collection Between 0631 - 0800 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
KR-85	1.22 E+01
KR-85M	1.23 E+03
KR-87	2.17 E+03
KR-88	3.35 E+03
XE-131M	3.55 E+01
XE-133	1.12 E+04
XE-133M	1.64 E+03
XE-135	2.17 E+03
XE-135M	2.17 E+01
XE-138	5.11 E+01

TOTAL NOBLE GAS 2.2 E+04

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 160 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 175 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ CONTACT = 190 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.4-C
PRIMARY COOLANT SYSTEM SAMPLE ACTIVITY
GAS COLLECTION BOMB

(Collection Between 0801 - 1000 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* - (UCI/GM)</u>
KR-85	1.09 E+01
KR-85M	1.09 E+03
KR-87	2.09 E+03
KR-88	3.00 E+03
XE-131M	3.27 E+01
XE-133	1.00 E+04
XE-133M	1.55 E+03
XE-135	2.00 E+03
XE-135M	2.00 E+01
XE-138	2.35 E+00

TOTAL NOBLE GAS	2.0 E+04
-----------------	----------

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 140 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 160 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ CONTACT = 180 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr.)

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.

TABLE 9.5-A
PRIMARY COOLANT SYSTEM SAMPLE ACTIVITY
DEGASSED ACTIVITY

(Collection Between 0531 - 0630 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION*</u>	<u>(UCI/GM)</u>
I-131	7.89 E+03	
I-132	1.13 E+04	
I-133	1.58 E+04	
I-134	1.37 E+03	
I-135	1.44 E+04	
CS-134	3.39 E+03	
CS-137	1.06 E+03	
BA-140	3.20 E+01	
LA-140	3.00 E+01	
TOTAL RADIOIODINE	4.8 E+04	
I-131 DOSE EQUIVALENT	1.1 E+04	
TOTAL DEGASSED ACTIVITY	5.5 E+04	

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 400 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 440 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ 1 CONTACT = 490 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.5-B
PRIMARY COOLANT SYSTEM SAMPLE ACTIVITY
DEGASSED ACTIVITY

(Collection Between 0631 - 0800 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
I-131	5.62 E+03
I-132	8.18 E+03
I-133	1.18 E+04
I-134	3.94 E+02
I-135	9.86 E+03
CS-134	6.06 E+03
CS-137	2.96 E+03
BA-140	9.47 E+01
LA-140	9.00 E+01
TOTAL RADIOIODINE	3.6 E+04
I-131 DOSE EQUIVALENT	8.2 E+02
TOTAL DEGASSED ACTIVITY	4.9 E+04

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 360 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 400 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ 1 CONTACT = 450 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.

TABLE 9.5-CPRIMARY COOLANT SYSTEM SAMPLE ACTIVITYDEGASSED ACTIVITY

(Collection Between 0801 - 1000 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
I-131	5.04 E+03
I-132	7.79 E+03
I-133	1.05 E+04
I-134	1.83 E+03
I-135	9.62 E+03
CS-134	1.51 E+03
CS-137	6.88 E+02
BA-140	2.21 E+01
LA-140	2.00 E+01
TOTAL RADIOIODINE	3.3 E+04
I-131 DOSE EQUIVALENT	7.8 E+03
TOTAL DEGASSED ACTIVITY	3.7 E+04

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 270 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 300 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ 1 CONTACT = 330 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr)..

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.6-A
CONTAINMENT SUMP SAMPLE
DEGASSED ACTIVITY

(Collection Between 0531 - 0630 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
I-131	5.99 E+03
I-132	9.25 E+03
I-133	1.25 E+04
I-134	2.17 E+03
I-135	1.14 E+04
CS-134	1.79 E+03
CS-137	8.17 E+02
BA-140	2.63 E+01
LA-140	2.50 E+01
TOTAL RADIOIODINE	3.9 E+04
I-131 DOSE EQUIVALENT	9.3 E+03
TOTAL DEGASSED ACTIVITY	4.4 E+04

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 320 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 350 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ 1 CONTACT = 390 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.

TABLE 9.6-B
CONTAINMENT SUMP SAMPLE
DEGASSED ACTIVITY

(Collection Between 0631 - 0800 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
I-131	2.64 E+03
I-132	4.08 E+03
I-133	5.52 E+03
I-134	9.58 E+02
I-135	5.03 E+03
CS-134	7.90 E+02
CS-137	3.61 E+02
BA-140	1.16 E+01
LA-140	1.00 E+01
TOTAL RADIOIODINE	1.7 E+04.
I-131 DOSE EQUIVALENT	4.1 E+03
TOTAL DEGASSED ACTIVITY	2.0 E+04.

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 140 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 160 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ 1 CONTACT = 170 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.

TABLE 9.6-C
CONTAINMENT SUMP SAMPLE
DEGASSED ACTIVITY

(Collection Between 0801 - 1000 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION* (UCI/GM)</u>
I-131	1.90 E+03.
I-132	2.93 E+03
I-133	3.96 E+03
I-134	6.88 E+02
I-135	3.61 E+03
CS-134	5.67 E+02
CS-137	2.59 E+02
BA-140	8.33 E+00
LA-140	8.30 E+00
TOTAL RADIOIODINE	1.2 E+04
I-131 DOSE EQUIVALENT	2.9 E+03
TOTAL DEGASSED ACTIVITY	1.3 E+04

UNDILUTED SAMPLE DOSE RATE @ 1 METER = 100 MR/HR

UNDILUTED SAMPLE DOSE RATE @ CONTACT = 100 R/HR

DILUTED SAMPLE DOSE RATE @ 1 METER = LESS THAN 1 MR/HR

DILUTED SAMPLE DOSE RATE @ 1 CONTACT = 120 MR/HR

* Concentrations corrected to time of reactor shutdown
(0535 hr).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.

TABLE 9.7-A

CONTAINMENT AIR SAMPLE ACTIVITY

(Collection Between 0531 - 0630 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION (UCI/CC)</u>
KR-85	5.26 E-02
KR-85M	5.26 E+00
KR-87	9.20 E+00
KR-88	1.36 E+01
XE-131M	1.49 E-01
XE-133	4.82 E+01
XE-133M	6.57 E+00
XE-135	9.16 E+00
XE-135M	8.76 E-02
XE-138	1.10 E+00
 TOTAL NOBLE GAS	 9.2 E+01
I-131	4.72 E-02
I-132	6.95 E-02
I-133	9.80 E-02
I-134	1.11 E-03
I-135	8.73 E-02
 TOTAL RADIOIODINE	 3.0 E-01
CS-134	2.07 E-04
CS-137	9.44 E-05
BA-140	3.00 E-06
LA-140	2.90 E-06

* Concentrations corrected to time of reactor shutdown
(0535 hr.).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.7-B

CONTAINMENT AIR SAMPLE ACTIVITY

(Collection Between 0631 - 0645 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION (UCI/CC).----</u>
KR-85	5.73 E-02
KR-85M	5.76 E+00
KR-87	1.04 E+01
KR-88	1.51 E+01
XE-131M	1.65 E-01
XE-133	5.10 E+01
XE-133M	7.65 E+00
XE-135	1.00 E+01
XE-135M	1.07 E-01
XE-138	5.08 E-01
 TOTAL NOBLE GAS	 1.0 E+02
 I-131	 5.15 E-02
I-132	7.54 E-02
I-133	1.07 E-01
I-134	4.91 E-03
I-135	9.47 E-02
 TOTAL RADIOIODINE	 3.3 E-01
 CS-134	 2.25 E-04
CS-137	1.03 E-04
BA-140	3.32 E-06
LA-140	3.00 E-06

* Concentrations: corrected to time of reactor shutdown
(0535 hr.).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.

TABLE 9.7-C

CONTAINMENT AIR SAMPLE ACTIVITY

(Collection Between 0646 - 0800 hours)

<u>NUCLIDE</u>	<u>CONCENTRATION (UCI/CC)</u>
KR-85	4.32 E-02
KR-85-M	4.32 E+00
KR-87	8.16 E+00
KR-88	1.12 E+01
XE-131M	1.26 E-01
XE-133	3.94 E+01
XE-133M	5.72 E+00
XE-135	7.42 E+00
XE-135M	7.64 E-02
XE-138	1.92 E+00
 TOTAL NOBLE GAS	 7.42 E+01
 I-131	 3.34 E-02
I-132	4.84 E-02
I-133	6.70 E-02
I-134	1.54 E-03
I-135	6.06 E-02
 TOTAL RADIOIODINE	 2.10 E-01
 CS-134	 2.36 E-04
CS-137	1.08 E-04
BA-140	3.48 E-06
LA-140	3.00 E-06

* Concentrations corrected to time of reactor shutdown
(0535 hr.).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.7-D

CONTAINMENT AIR SAMPLE ACTIVITY

(Collection Between 0831- 1000 hr, DAY 1)

<u>NUCLIDE</u>	<u>CONCENTRATION (UCI/CC)**</u>
KR-85	2.00 E-02
KR-85M	2.00 E+00
KR-87	4.00 E+00
KR-88	5.06 E+00
XE-131M	6.16 E-02
XE-133	1.85 E+01
XE-133M	2.86 E+00
XE-135	3.70 E+00
XE-135M	3.80 E-02
XE-138	9.60 E-01
TOTAL NOBLE GAS	3.7 E+01
I-131	1.62 E-02
I-132	2.40 E-02
I-133	3.30 E-02
I-134	7.70 E-03
I-135	3.00 E-02
TOTAL RADIOIODINE	1.0 E-01
CS-134	1.10 E-04
CS-137	5.40 E-05
BA-140	1.70 E-06
LA-140	1.50 E-06

* Concentrations corrected to time of reactor shutdown
(0535 hr.).

** Data to be provided to HP/Chemistry personnel in accordance
with Exercise ground rules.



TABLE 9.8 .

EXPOSURE RATES AT VARIOUS DISTANCES FROM PLANT
VENTILATION DUCTWORK

<u>TIME</u>	<u>MILLIREM PER HR</u>					
	<u>0.5 FT</u>	<u>1 FT</u>	<u>3 FT</u>	<u>5 FT</u>	<u>10 FT</u>	<u>15 FT</u>
01:00 - 06:44	0.1	0.1	0.1	0.1	0.1	0.1
06:45 - 08:00	10,000	7,900	3,500	2,000	750	380
08:01 - 12:00	5	3	0.8	0.5	0.1	0.1

TABLE 9.9

HYDROGEN CONCENTRATION IN CONTAINMENT

<u>Time</u>	<u>Concentration (vol %)</u>
0000-0530	0.01
0531-0630	0.5
0631-0645	1.0
0646-0800	0.40
0801-1100	0.08

All values are below the combustible level of 4%



TABLE 9.10

PRIMARY SYSTEM BORON DATA

<u>Sample</u>	<u>Time</u>	<u>ppm Boron</u>	<u>pH</u>
RCS	0100-0430	65	7.3
Sump		40	7.4
RCS	0431-0530	120	7.2
Sump		80	7.3
RCS	0531-0630	200	6.9
Sump		140	7.1

NOTE: SI starts at 0530 (Steam Break) and again at 0630 (LOCA)

RCS	0631-0800	1700	5.8
Sump		1400	6.1
RCS	0801-1000	2300	5.4
Sump		2100	5.5



SECTION 10.0

METEOROLOGICAL AND OFFSITE RADIOLOGICAL DATA

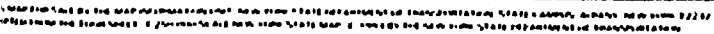


SECTION 10.1

METEOROLOGICAL CONDITIONS AND FORECASTS



DIRECTION OF PLUME



5 MILES

NORTH



TABLE 10.1

SUMMARY OF GINNA SITE METEOROLOGICAL CONDITIONS
(HOURLY AVERAGES)

<u>CLOCK TIME</u>	<u>WS-33FT</u> <u>(MPH)</u>	<u>WD-33 FT</u> <u>(DEG. FROM)</u>	<u>TEMP -</u> <u>33 FT</u>	<u>PASQUILL</u> <u>STABILITY</u>	<u>GENERAL</u> <u>WEATHER</u>
<u>DAY 1</u>					
0000-0100	3.2	330	65	F	OVERCAST
0100-0200	3.2	330	65	F	DRIZZLE
0200-0300	3.4	328	67	F	DRIZZLE
0300-0400	4.2	337	69	F	DRIZZLE
0400-0500	4.7	342	70	F	DRIZZLE
0500-0600	5.6	003	71	F	DRIZZLE
0600-0700	5.5	025	73	F	DRIZZLE
0700-0800	5.5	030	74	F	DRIZZLE
0800-0900	5.3	030	75	F	DRIZZLE
0900-1000	7.1	029	75	F	DRIZZLE
1000-1100	7.1	029	75	F	DRIZZLE
1100-1200	7.5	030	76	F	DRIZZLE
1200-1300	7.0	030	75	F	PT. CLOUDY
1300-1400	7.0	030	74	F	PT. CLOUDY
1400-2400	8.0	030	65	D	PT. CLOUDY

DAY 2

0000-2400

USE ACTUAL METEOROLOGY

DAY 3

0000-2400

USE ACTUAL METEOROLOGY

TABLE 10.2

FORECAST INFORMATION

Weather Forecast*

October , 1987 0200 am

<u>STATION NAME</u>	<u>TMP</u>	<u>WIND</u>	<u>GST</u>	<u>VIS</u>	<u>WEATHER</u>	<u>PS</u>
Kingston, ONT	63	4		15	light rain	G
Rochester, NY	67	3		15	light rain	F
Syracuse, NY	65	5		15	light rain	F
Buffalo, NY	64	5		15	light rain	F

Zone Forecasts

Western Lake Ontario Counties:

- o Today - Warm, with light drizzle throughout the day. Winds changing to north-northeasterly this morning at 4 to 6 mph. Scattered showers expected in the Finger Lakes area. Partly cloudy this evening with less than 10% chance of precipitation. Highs in the mid 70's.
- o Tonight - Cooler temperatures. Northeasterly winds at 5 to 10 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Eastern Lake Ontario Counties:

- o Today - Humid with overcast skies and light rain throughout most of the day. Light winds from the north-northeast at 5 mph. Highs in the mid 70's.
- o Tonight - Cooler temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Lake Ontario (South Shore Marine Forecast):

- o Winds remaining north-northeasterly throughout the day. Winds less than 8 mph. Wave height less than 1 foot.

* To be provided to the Dose Assessment Manager or designee



TABLE 10.2 (cont'd)

FORECAST INFORMATION

Weather Forecast*

October , 1987 0400 am

STATION NAME	TMP	WIND	GST.	VIS	WEATHER	PS
Kingston, ONT	67	4		15	light rain	F
Rochester, NY	69	5		15	light rain	F
Syracuse, NY	68	4		15	light rain	E
Buffalo, NY	66	4		15	light rain	F

Zone Forecasts

Western Lake Ontario Counties:

- o Today - Warm, with light drizzle throughout the day. Winds changing to north-northeasterly this morning at 4 to 6 mph. Scattered showers expected in the Finger Lakes area and Southern Tier. Partly cloudy this evening with less than 10% chance of precipitation. Highs in the mid 70's.
- o Tonight - Cooler Temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Eastern Lake Ontario Counties:

- o Today - Humid with overcast skies and light rain throughout most of the day. Light winds from the north-northeast at less than 5 mph. Highs in the mid 70's.
- o Tonight - Cooler temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Lake Ontario (South Shore Marine Forecast):

- o Winds remaining north-northeasterly throughout the day. Winds less than 8 mph. Wave height less than 1 foot.

* To be provided to the Dose Assessment Manager or designee.



TABLE 10.2 (cont'd)

FORECAST INFORMATION

Weather Forecast*

October , 1987 0600 am

STATION NAME	TMP	WIND	GST	VIS	WEATHER	PS
Kingston, ONT	70	4		15	light rain	F
Rochester, NY	72	4		15	light rain	F
Syracuse, NY	71	5		15	light rain	E
Buffalo, NY	70	4		15	light rain	E

Zone Forecasts

Western Lake Ontario Counties:

- o Today - Warm, with light drizzle throughout the day. Winds from the north-northeast at 4 to 6 mph. Scattered showers expected in the Finger Lakes area and the Southern Tier. Partly cloudy this evening with less than 10% chance of precipitation. High in the mid 70's.
- o Tonight - Cooler temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Eastern Lake Ontario Counties:

- o Today - Humid with overcast skies and light rain throughout most of the day. Light winds from the north-northeast at less than 5 mph. Highs in the mid 70's.
- o Tonight - Cooler Temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Lake Ontario (South Shore Marine Forecast):

- o Winds remaining north-northeasterly throughout the day. Winds less than 8 mph. Wave height less than 1 foot.

* To be provided to the Dose Assessment Manager or designee.



TABLE 10.2 (cont'd)

FORECAST INFORMATION

Weather Forecast*

October , 1987 0800 am

STATION NAME	TMP	WIND	GST	VIS	WEATHER	PS
Kingston, ONT	75	5		15	light rain	F
Rochester, NY	77	6		15	light rain	F
Syracuse, NY	76	6		15	light rain	E
Buffalo, NY	75	5		15	light rain	E

Zone Forecasts

Western Lake Ontario Counties:

- o Today - Warm, with light drizzle throughout the day. Winds from the north-northeast at 4 to 6 mph. Scattered showers expected in the Finger Lakes area and the Southern Tier. Partly cloudy this evening with less than 10% chance of precipitation. Highs in the mid 70's.
- o Tonight - Cooler temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Eastern Lake Ontario Counties:

- o Today - Humid with overcast skies and light rain throughout most of the day. Light winds from the north-northeast at less than 5 mph. Highs in the mid 70's.
- o Tonight - Cooler temperatures. Northeasterly winds at 6 to 9 mph. Temperature in the low 40's. Less than 10% chance of precipitation.

Lake Ontario (South Shore Marine Forecast):

- o Winds remaining north-northeasterly throughout the day. Winds less than 8 mph. Wave height less than 1 foot.

* To be provided to the Dose Assessment Manager or designee.



SECTION 10.2

ONSITE AND OFFSITE RADIOLOGICAL READINGS

PLUME MAP (0-1 MILE)

FIGURE 10.2

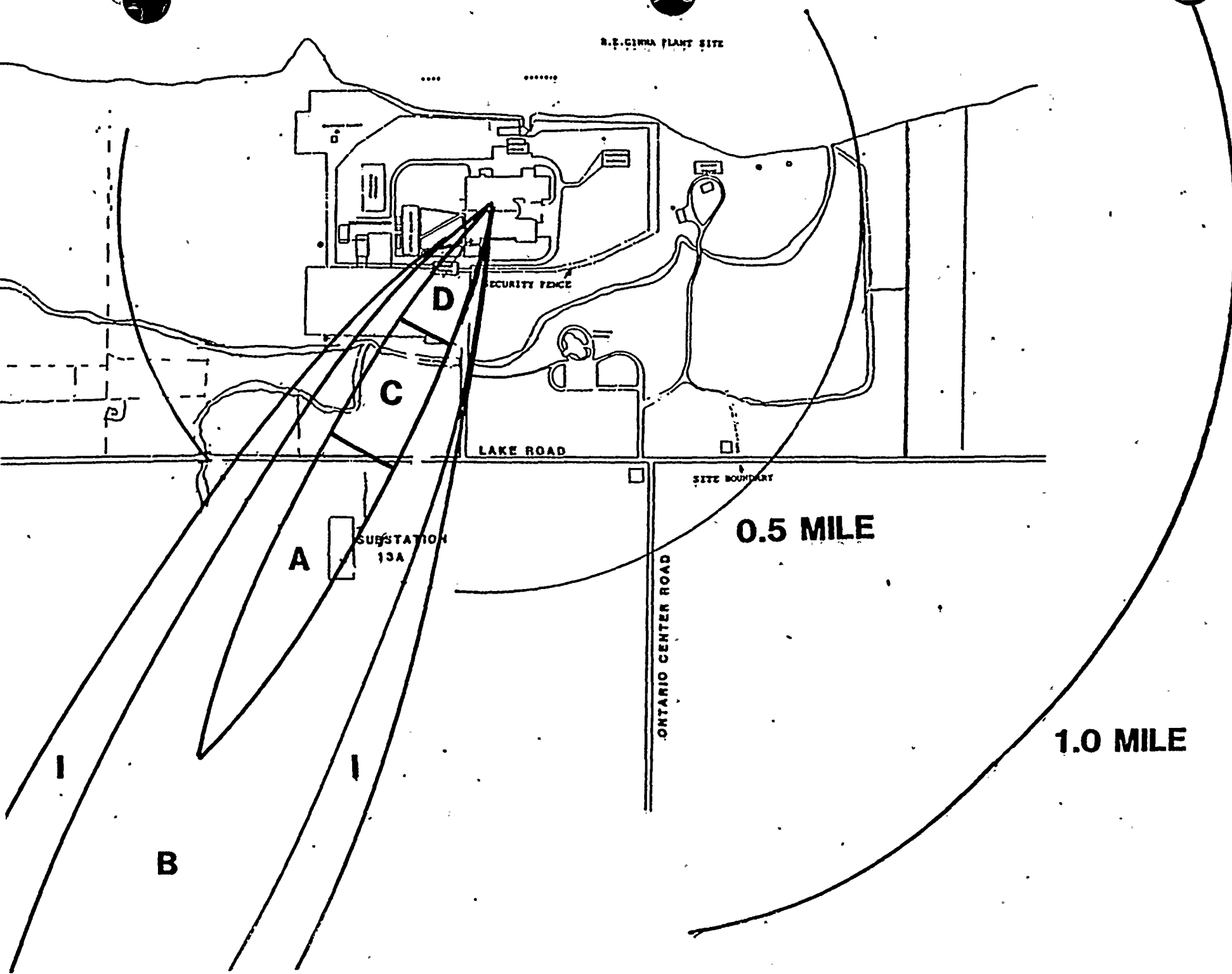
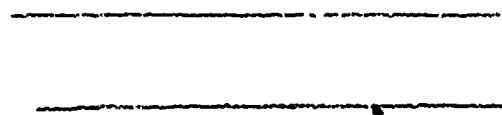


FIGURE 10.3

(REFER TO LARGE SIZE

0 - 10 MILE ZONE MAP)



0 - 10 MILE ZONE MAP

0 - 10 MILE ZONE MAP



TABLE 10.3

PLUME ARRIVAL/DEPARTURE TIMES

DISTANCE (MILES)	TIME OF * PLUME ARRIVAL	TIME OF ** PLUME DEPARTURE
0.5	06:50	08:05
1.0	06:55	08:10
2.0	07:05	08:20
3.0	07:15	08:30
4.0	07:25	08:40
5.0	07:35	08:50
6.0	07:45	09:00
7.0	07:55	09:10
8.0	08:05	09:20
9.0	08:15	09:30
10.0	08:25	09:40
11.0	08:35	09:50
12.0	08:45	10:00

NOTES:

- * After indicated arrival time, refer to offsite radiological data shown on Table 10.4 for zone of interest.
- ** After indicated departure time, refer to post-plume offsite radiological data shown on Tables 10.5 and 10.6.



TABLE 10.4

RADIOLOGICAL SURVEY/SAMPLING DATA

ZONE	CLOSE WINDOW (mR/hr)		OPEN WINDOW (Mr/hr)		DOSIMETRY INCREMENT EXPOSURE (mREM)	IODINE CARTRIDGE (CPM)	PARTICULATE FILTER (CPM)
	3 FEET	CONTACT	3 FEET	CONTACT			
A	8,800	8,800	12,000	12,000	2,200	14,000	16,000
B	4,800	4,800	6,400	6,400	1,200	6,700	7,800
C	2,400	2,400	3,200	3,200	600	3,200	3,800
D	1,100	1,100	1,400	1,400	270	1,400	1,600
E	670	670	900	900	170	850	990
F	470	470	620	620	120	560	650
G	310	310	410	410	80	270	310
H	210	210	280	280	50	70	80
I	180	180	240	240	45	50	55

NOTES:

1. Dose rate readings apply to AutoDigimaster, RO-2, and CDV-715 instrument or equivalent. Ensure that readings provided do not exceed range of survey instrument being used. Provide only those readings being requested, or in accordance with Controller instructions.
2. Dosimeter incremental exposure assumes a 15-minute stay-time in the particular zone of interest. Incremental values may be scaled up or down as appropriate. Provide cumulative DRD reading only when requested.
3. Air samples assume use of RADECO H-809C air sampler or equivalent. Volume assumed is approximately 300 liters (10 ft³), and field reading is with HP-190 (background = 20 cpm), or HP-210/260 pancake probe (background = 30 cpm).

SECTION 10.3

DEPOSITION DATA AT TERMINATION OF RELEASE



FIGURE 10.4

NYS IP EXERCISE

GINNA RELEASE DEPOSITION PATTERN

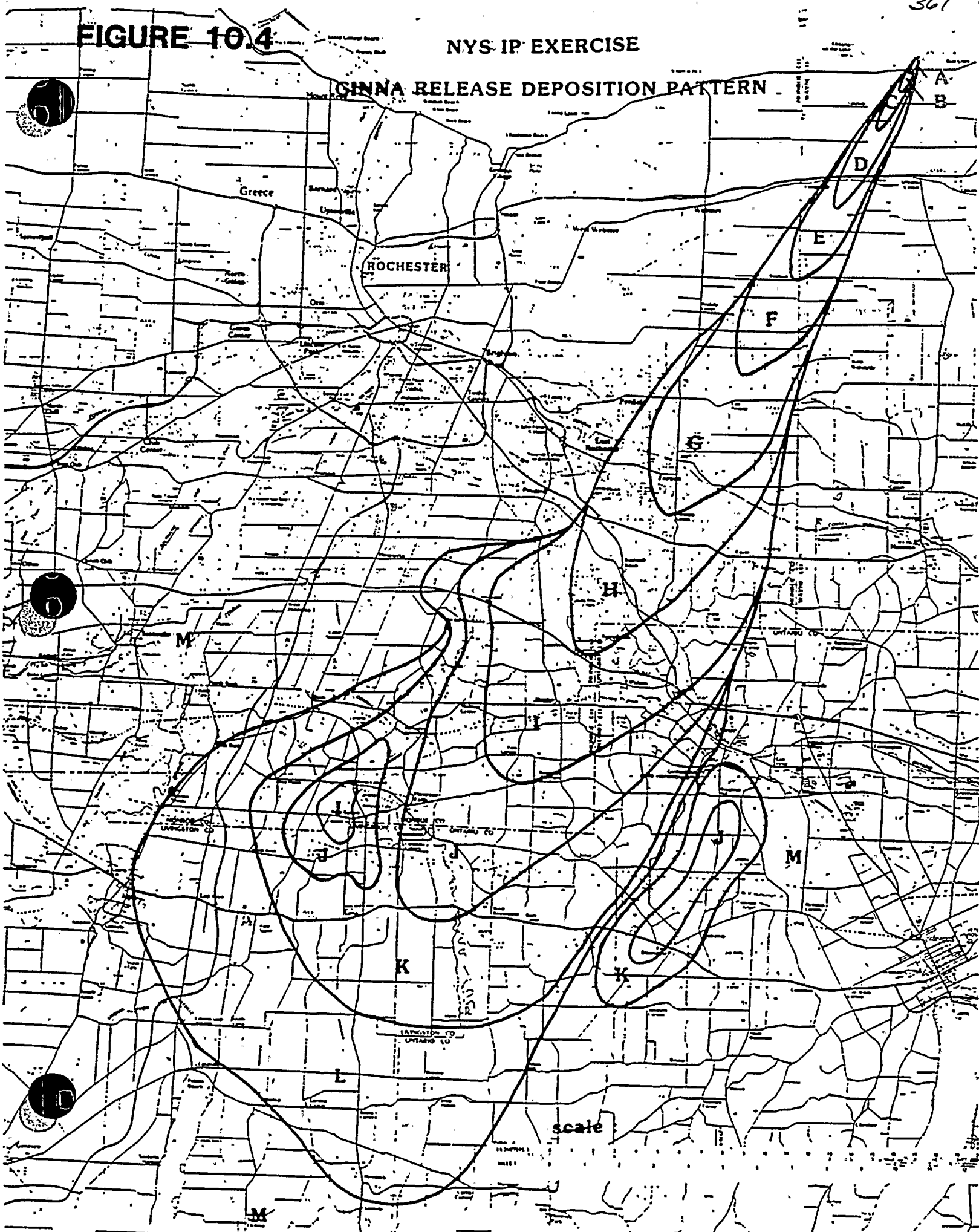




TABLE 10.5

GROUND SURVEYS (CPM)

DAY 1

AFTER PLUME PASSAGE

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	2.19E+02	7.1E+03	5.0E+04	1.2E+04	5.0E+04
B	1.19E+02	3.9E+03	4.8E+04	6.3E+03	5.0E+04
C	5.95E+01	1.9E+03	2.4E+04	3.2E+03	5.0E+04
D	2.64E+01	8.7E+02	1.1E+04	1.4E+03	2.6E+04
E	1.67E+01	5.6E+02	6.7E+03	9.1E+02	1.7E+04
F	1.17E+01	4.0E+02	4.7E+03	6.5E+02	1.2E+04
G	7.64E+00	2.7E+02	3.1E+03	4.3E+02	7.6E+03
H	5.20E+00	1.9E+02	2.1E+03	3.0E+02	5.2E+03
I	4.50E+00	1.6E+02	1.8E+03	2.7E+02	4.5E+03
J	1.22E+00	5.9E+01	4.9E+02	9.4E+01	1.2E+03
K	2.61E-01	5.4E+01	1.0E+02	8.5E+01	2.6E+02
L	2.19E-01	4.8E+01	8.7E+01	7.6E+01	2.2E+02
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)
30 CPM (PANCAKE)

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TABLE 10.6

MICRO-R/HR

DAY 1

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME = 0.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	@1 METER	@1 CM
		MICRO-R/HOUR	MICRO-R/HOUR
A	2.19E+02	3.2E+03	5.5E+03
B	1.19E+02	1.7E+03	3.0E+03
C	5.95E+01	8.7E+02	1.5E+03
D	2.64E+01	3.9E+02	6.6E+02
E	1.67E+01	2.4E+02	4.2E+02
F	1.17E+01	1.7E+02	2.9E+02
G	7.64E+00	1.1E+02	1.9E+02
H	5.20E+00	7.6E+01	1.3E+02
I	4.50E+00	6.6E+01	1.1E+02
J	1.22E+00	1.8E+01	3.0E+01
K	2.61E-01	1.5E+01	2.6E+01
L	2.19E-01	1.3E+01	2.2E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR



AIR SAMPLE ISOTOPIC RESULTS

TABLE 10.7-A

AIR PARTICULATE FILTER
ISOTOPIC ACTIVITY

(COLLECTION DURING RELEASE)

ZONE	TOTAL ACTIVITY UCI/CC	FIELD READING (CPM)	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC
A	1.27E-06	16,068	1.89E-07	3.78E-07	1.81E-09	8.31E-10	4.23E-11	4.23E-11
B	6.16E-07	7,822	9.18E-08	1.84E-07	8.81E-10	4.04E-10	2.06E-11	2.06E-11
C	2.97E-07	3,778	4.42E-08	8.84E-08	4.24E-10	1.95E-10	9.90E-12	9.90E-12
D	1.25E-07	1,606	1.87E-08	3.73E-08	1.79E-10	8.21E-11	4.18E-12	4.18E-12
E	7.63E-08	986	1.14E-08	2.27E-08	1.09E-10	5.00E-11	2.55E-12	2.55E-12
F	4.97E-08	649	7.40E-09	1.48E-08	7.11E-11	3.26E-11	1.66E-12	1.66E-12
G	2.32E-08	314	3.46E-09	6.92E-09	3.32E-11	1.52E-11	7.75E-13	7.75E-13
H	4.74E-09	80	7.06E-10	1.41E-09	6.78E-12	3.11E-12	1.58E-13	1.58E-13
I	2.73E-09	55	4.07E-10	8.14E-10	3.91E-12	1.79E-12	9.12E-14	9.12E-14
J	1.13E-09	34	1.68E-10	3.35E-10	1.61E-12	7.38E-13	3.75E-14	3.75E-14
K	3.85E-10	25	5.73E-11	1.15E-10	5.50E-13	2.52E-13	1.28E-14	1.28E-14
L	8.06E-11	21	1.20E-11	2.40E-11	1.15E-13	5.28E-14	2.69E-15	2.69E-15
M	L.T. LLD	20	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

SILVER ZEOLITE CARTRIDGE
RADIOIODINE ISOTOPIC ACTIVITY

ZONE	TOTAL ACTIVITY UCI/CC	FIELD READING (CPM)	I-131 UCI/CC	I-132 UCI/CC	I-133 UCI/CC	I-134 UCI/CC	I-135 UCI/CC
A	3.80E-06	13,672	5.66E-07	8.16E-07	1.13E-06	2.55E-07	1.03E-06
B	1.85E-06	6,657	2.75E-07	3.97E-07	5.51E-07	1.24E-07	4.98E-07
C	8.89E-07	3,217	1.33E-07	1.91E-07	2.65E-07	5.97E-08	2.40E-07
D	3.75E-07	1,369	5.60E-08	8.06E-08	1.12E-07	2.52E-08	1.01E-07
E	2.28E-07	842	3.41E-08	4.91E-08	6.82E-08	1.53E-08	6.17E-08
F	1.49E-07	555	2.22E-08	3.20E-08	4.44E-08	9.99E-09	4.02E-08
G	6.96E-08	270	1.04E-08	1.50E-08	2.08E-08	4.67E-09	1.88E-08
H	1.42E-08	71	2.12E-09	3.05E-09	4.24E-09	9.54E-10	3.84E-09
I	8.19E-09	49	1.22E-09	1.76E-09	2.44E-09	5.50E-10	2.21E-09
J	3.37E-09	32	5.03E-10	7.24E-10	1.01E-09	2.26E-10	9.10E-10
K	1.15E-09	24	1.72E-10	2.48E-10	3.44E-10	7.74E-11	3.11E-10
L	2.41E-10	21	3.60E-11	5.18E-11	7.20E-11	1.62E-11	6.52E-11
M	L.T. LLD	20	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

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PART I

GENERAL INFORMATION



ADDENDUM

STATE OF NEW YORK
AND
ROCHESTER GAS AND ELECTRIC CORPORATION

EMERGENCY PREPAREDNESS EXERCISE MANUAL
1987 INGESTION PATHWAY EMERGENCY EXERCISE.

OCTOBER, 1987

Prepared by:
ROCHESTER GAS & ELECTRIC CORPORATION

CONTROLLED COPY NO. _____



1987 INGESTION PATHWAY EMERGENCY EXERCISE

FOREWORD

This exercise package has been developed to provide the basis for the conduct of a simulated major radiological accident at the Ginna Station located in Ontario, New York. The simulated accident will be assumed to be of sufficient magnitude to result in significant offsite deposition affecting various environmental media of concern within the 50-mile Ingestion Pathway Emergency Planning Zone. Through this exercise, the capabilities and effectiveness of the Emergency Response Plan for the State of New York will be demonstrated and evaluated. Utility, local government and federal agency support capabilities will also be demonstrated as supplementary assistance to the New York State Response.

This package is to be utilized by the Exercise controllers and observers to initiate, control and evaluate the activities of the participants in the Ingestion Pathway Emergency Exercise.

The State of New York and Rochester Gas and Electric Corporation approve this document as the standard for conduct in performance of the October, 1987, Ingestion Pathway Emergency Exercise.

STATE OF NEW YORK
AND
ROCHESTER GAS AND ELECTRIC CORPORATION
1987 INGESTION PATHWAY EMERGENCY EXERCISE

INTRODUCTION

The New York State Ingestion Pathway Emergency Response Plan describes the emergency response capabilities and responsibilities for a radiological emergency affecting the State, including support from Federal, State, and local government agencies and private organizations. The State Ingestion Pathway Emergency Response Plan provides for continuous emergency preparedness, including a Federally-evaluated exercise to be conducted at a minimum 6-year frequency.

The purpose of the Exercise is to activate and evaluate major portions of the emergency response capabilities and other aspects of the New York State Ingestion Pathway Emergency Response Plan and associated Implementing Procedures, in accordance with Nuclear Regulatory Commission (NRC) Regulation 10CFR50.47(b) and Appendix E, and Federal Emergency Management Agency (FEMA) Draft Guidance Memorandum IN-1. This Exercise will be with the participation of State of New York, selected counties within a 50-mile radius of the R.E. Ginna Nuclear Power Plant, the Department of Energy and Rochester Gas and Electric Corporation in order to assess overall State emergency capabilities in response to a postulated event affecting the Ingestion Pathway.

This Exercise Manual has been developed to provide the basis for the conduct of a simulated radiological accident at the Ginna Station facility located in Ontario, New York. This manual is to be utilized by the exercise controllers to initiate, control, and evaluate the activities of the participants in the exercise. Exercise "players" will not have prior knowledge of the nature of the simulated incident or any parts thereof such as radiological plume release information, including times, content, size and weather pattern used.

This Exercise Manual is the control mechanism for the conduct of the Exercise and consists of two parts. Part I provides a general description and overview of the emergency exercise. Part II contains the scenario and time schedule of simulated plant conditions. The Exercise Manual is subject to a limited, controlled distribution.

NOTE: As exercise efforts progress, minor changes may be required to this scenario package. Any changes will be identified during pre-exercise meetings.



ADDENDUM
STATE OF NEW YORK

1987 INGESTION PATHWAY EXERCISE

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STATE OF NEW YORK
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SECTION 1.0:
SCOPE AND OBJECTIVES

1987 INGESTION PATHWAY EXERCISE

SECTION 1.0 SCOPE AND OBJECTIVES

1.0 SCOPE AND OBJECTIVES

1.1 Scope

The 1987 Ingestion Pathway Emergency Preparedness Exercise, to be conducted in October, 1987, will simulate post-accident conditions resulting from a major radiological accident releases from the R.E. Ginna Nuclear Power Plant, located in Ontario, Wayne County, New York. The Ingestion Pathway Exercise will involve events that test the effectiveness of the New York State Radiological Emergency Preparedness Plan (REP), the State Radiological Ingestion Exposure Procedure, the integrated capabilities of the emergency organizations of the State of New York, the counties within a 50-mile radius of the Ginna Nuclear Power Plant, the Department of Energy and Rochester Gas and Electric Corporation. The Exercise will include the limited mobilization of state, local and utility resources adequate to verify their capability to respond to an accident.

The exercise objectives are provided as separate sections, divided into the objectives for the Plant (Section 1.2) and those of each state/local agency (Section 1.3). A summary of proposed activities is delineated in section 1.4, following the attachments.

1.2 On-Site Objectives (EOF)

The major objective of the exercise is to demonstrate the response capabilities of the Ginna Station Emergency Response Organization. Within this overall objective, numerous individual objectives are specified as follows:

1.2.1

Demonstrate ability to deploy and coordinate environmental sampling teams (0-10 miles). Teams will be simulated.

1.2.2

Demonstrate ability to evaluate laboratory data and/or field measurements and provide appropriate PAR's and interface to New York State.

1.2.3

Provide interface with New York State Post-Accident Assessment and in Public Information functions as needed.



1987 INGESTION PATHWAY EXERCISE, cont'd

SECTION 1.0

1.3 Off-site Objectives

The off-site agencies' objectives are found as follows:

(SEE ATTACHED PROPOSED OFF-SITE OBJECTIVES, ATTACHMENT A)

1.4 Summary of Proposed Activities

Table 1-1 lists a summary of proposed activities for the 1987 Ingestion Pathway Emergency Preparedness Exercise. The listing describes, by organization, if an activity is to actually be accomplished or is to be simulated. A blank space denotes that the activity does not apply to that particular agency.

PROPOSED EXERCISE OBJECTIVES FOR
THE 1987 GINNA EXERCISE
Rev. 8/26/87

New York State

State Emergency Operations Center (SEOC)

SEOC -1 Demonstrate the ability to communicate with all
(CO -5) appropriate locations, organizations, and field support.

Guidelines: State, counties and the utility should establish appropriate communication links. Systems include RECS line, executive hot-line and commercial lines, RACES, radios and telefax. The RECS line will be used as the primary system to receive information from the licensee. Also, the ability to receive and verify the initial and follow-up emergency notification from the licensee will be observed. (No simulated failures are to be evaluated. Back-up systems are to be used in the event of actual failure of the primary systems.

SEOC -2 Demonstrate the ability to mobilize staff and activate
(CO -1) the State EOC in a timely manner.

Guidelines: Proper use of call-up procedures, and timely arrival of staff and setting up of EOC.

SEOC -3 Demonstrate the adequacy of facilities and displays to
(CO -4) support emergency operations.

Guidelines: Ensure measures are in place to control access to EOC areas; identification badges are verified; ingress and egress logs are maintained. Messages are transmitted in an accurate and timely manner, messages are to be properly logged, status boards are accurately maintained and updated, appropriate briefings are held and incoming personnel are briefed. Sufficient equipment (e.g., furniture, space, lighting, telephones and status boards) should be available.



SEOC -4 Demonstrate the ability to make decisions and to
(CO -3) coordinate emergency activities.

Guidelines: Individual acting in command & control for decision making must be clearly in charge, taking into account all critical parameter (e.g., evacuation time estimates, available resources, met data, etc.).

SEOC -5 Demonstrate the ability to fully staff facilities and
(CO -2) maintain staffing around the clock.

Guidelines: An actual shift change involving all key staff must be observed. The shift change must show 24 hour coverage. Agencies that have demonstrated 24 hour coverage in previous exercises will be given credit for meeting this objective.

SEOC -6 Demonstrate the ability to identify the need for,
(CO -32) request and obtain Federal assistance.

Guidelines: This issue will be evaluated as a command and control function. The decision maker will be asked about the circumstance under which he would request Federal assistance.

SEOC -7 Demonstrate the ability to project dosage to the public
(CO -10) via the plume exposure, based on plant and field data, and to determine appropriate protective actions based on PAG's, available shelter, evacuation time estimates, and all other appropriate factors.

Guidelines: Dose assessment and accident evaluation personnel will provide recommendations to the decision maker based upon utility recommendations, independent recommendations from accident assessment group and off-site factors. Command and control will make decision based on inputs from the various sources. all factors will be carefully analyzed before a decision is made.

SEOC -8 Demonstrate the ability to provide advance
(CO -25) coordination of information released.

Guidelines: Coordinate among NYS and 2 counties for the decision to simulate the activation of the sirens and the subsequent activation of the EBS.

SEOC -9 Demonstrate the ability to supply and administer KI, if
(CO -22) the decision has been made to do so.

Guidelines: The decision making process for KI will be discussed after the release occurs. In the event the scenario does not yield a significant iodine release that warrants KI usage, emergency workers should know who will direct them to take KI.

SEOC Demonstrate the ability to make decisions and to
ING -1 coordinate emergency activities within the ingestion
(CO -3) pathway exposure emergency planning zone.

Guidelines: Command and control decisions based on inputs from various sources. All factors will be carefully analyzed before a decision is made.

SEOC Demonstrate the ability to communicate with all
ING -2 appropriate locations, organizations, and field
(CO -5) personnel; special emphasis will be on communications between field monitoring and sampling teams and their control points.

Guidelines: Communications include radio, telefax and commercial lines.

SEOC Demonstrate the ability to project dosage to the
ING -3 public via ingestion pathway exposure, based on utility
(CO -11) and field data and to determine appropriate protective actions, based on the PAG's and other relevant factors

Guidelines: Dose assessment and accident evaluation personnel will provide these recommendations to decision makers

SEOC Demonstrate the ability to implement preventive and
ING -4 emergency protective actions for the ingestion
(CO -12) exposure pathway hazards.

Guidelines: Command and Control will analyze situation including staff input and issue a decision to the respective agencies for implementation.

SEOC
ING -5
(CO -6)

Demonstrate the ability to mobilize and deploy sample collection teams in an timely fashion.

Guidelines: 5 State ingestion team members will be notified during the inhalation portion of the exercise and then pre-positioned at one of the appropriate SEMO district office at the beginning of the ingestion phase. Equipment checkout, team briefings and the current status and dispatching to field monitoring sample points will be conducted.

The 5 teams will actually be deployed in the 50 mile EPZ. Dose assessment will be done solely with State input. Other State agency teams may simulate activity. Brookhaven National Laboratory/DOE will assist per the Federal Monitoring and Assessment Plan.

SEOC
ING -6

Demonstrate appropriate equipment and procedures for laboratory measurement and analysis of appropriate radioisotope deposition in food and environmental samples.

Guidelines: Selected field samples will be delivered to the DOH labs, Albany. The lab techniques will not be evaluated. Data for the samples will be provided by a controller to the appropriate exercise participants. Upon arrival at the lab, sorting, diluting and labeling of samples, procedures for preventing laboratory contamination and cross contamination and some sample preparation will be evaluated. Laboratory analytical capabilities will be documented by the NRC and provided to FEMA.

SEOC
ING-7
(CO-34)

Demonstrate the ability to estimate total population exposure.

Guidelines: The methodology and consultative processes used to determine total population exposure will be evaluated. Actual calculations for determining population exposures will not be evaluated.



SEOC
ING-8
JNC-1
(CO-14)

Demonstrate the ability to formulate and distribute appropriate instructions to the public in a timely manner.

Guideline: The only portion of information that will be operational will be the State function responsible for the distribution of information to the public. This objective will be demonstrated out of the SEOC for the purpose of this exercise. No rumor control, media response nor issuance of EBS will be evaluated, however, the capability for these will be observed.

Western District Emergency Operating Center (WDEOC)

WDEOC-1 Demonstrate the ability to mobilize staff and activate the WDEOC in a timely manner.
(CO-1)

Guideline: Proper use of the call-up procedures and timely arrival of staff and setting-up of EOC.

WDEOC-2 Demonstrate the adequacy of facilities and displays to support emergency operations.
(CO -4)

Guidelines: Ensure measures are in place to control access to EOC areas; identification badges are verified; ingress and egress logs are maintained. Messages are transmitted in an accurate and timely manner, messages are properly logged, status boards are accurately maintained and updated, appropriate briefings are held and incoming personnel are briefed. Sufficient equipment (e.g., furniture, space, lighting, telephones and status boards) should be available.

WDEOC-3 Demonstrate the ability to make decisions and to coordinate emergency activities.
(CO-3)

Guideline: Individual acting in & control for assisiting in implementing State EOC activities must be in charge.

WDEOC-4 Demonstrate the ability to communicate with all appropriate locations, organizations, and field personnel.
(CO-5)

Guideline: Communications include RECS line, and commercial lines. (Note: No simulated failures are to be evaluated. Back-up systems are to be used in the event actual failure of the primary system).



WDEOC-5 Demonstrate the ability to fully staff facilities
(CO-2) and maintain staffing around the clock.

Guideline: Same as SEOC-5, (CO-2).

Lake District Emergency Operating Center LDEOC

LDEOC-1 Demonstrate the ability to mobilize staff and activate
(CO-1) the LDEOC in a timely manner.

Guideline: Proper use of the call-up procedures and
timely arrival of staff and setting-up of
EOC.

LDEOC-2 Demonstrate the adequacy of facilities and displays
(CO-4) to support emergency operations.

Guidelines: Ensure measures are in place to control
access to EOC areas; identification badges are
verified; ingress and egress logs are maintained.
Messages are transmitted in an accurate and timely
manner, messages are properly logged, status boards are
accurately maintained and updated, appropriate
briefings are held and incoming personnel are briefed.
Sufficient equipment (e.g., furniture, space, lighting,
telephones and status boards) should be available.

LDEOC-3 Demonstrate the ability to make decisions and to
(CO-3) coordinate emergency activities.

Guideline: See WDEOC-3, (CO-4).

LDEOC-4 Demonstrate the ability to communicate with all
(CO-5) appropriate locations, organizations, and field
personnel.

Guideline: Communications include RECS line, executive
command line, and commercial lines. (Note:
No simulated failures are to be evaluated.
Back-up systems are to be used in the event
of actual failure of primary systems). If
appropriate, capability for receiving field
measurement data from sampling teams will be
evaluated.

LDEOC Demonstrate the ability to communicate with all
ING-2 appropriate locations, organizations and field
(CO-5) personnel.

Guideline: Communication with field sampling team
will be by use of radio.

LDEOC-5
ING -5
(CO -6)

Demonstrate the ability to mobilize and deploy sample collection teams in a timely fashion.

Guidelines: 5 State ingestion team members will be notified and pre-positioned at the district office. Equipment checkout, team briefing and the current status and dispatching to field monitoring sample points will be conducted.

LDEOC-6
(CO-2)

Demonstrate the ability to fully staff facilities and maintain staffing around the clock.

Guideline: Same as SEOC -5, (CO-2)

LDFA-1
(CO-9)
ING

Demonstrate appropriate equipment including personal dosimetry and procedures for the collection and transport of samples of soils, vegetation, snow, water and milk.

Guideline: Selected samples will be delivered to DOH lab, Albany, from the area of potential impact. protective clothing will not be worn for the duration of the ingestion pathway exercise. supplies of protective clothing, including hand and foot covering can be worn for evaluation, then removed.

Emergency Operating Facility (EOF)

EOF-1
(CO-1)

Demonstrate the ability to mobilize staff and activate State functions at the EOF in a timely manner.

Guideline: The State representative will not be pre-positioned. State representative will demonstrate an appropriate arrival time, at the Alert ECL. Local State EOF representative will activate in accordance with procedures.

EOF-2
(CO-5)

Demonstrate the ability to communicate with all appropriate locations, organizations, and field personnel.

Guideline: Communications include RECS line, RACES, radios, telefax, and commercial lines.
(Note: No simulated failures are to be evaluated. Back-up systems are to be used in the event of actual failure of the primary systems). Commercial telephone lines will be the primary system

EOF-3 Demonstrate the adequacy of facilities and displays to
(CO-4) support emergency operations

Guidelines: Same as SEOC -3, (CO-4).

EOF-4 Demonstrate the ability to fully staff facilities and
(CO-2) and maintain staffing around the clock.

Guideline: 24 hour capability will be shown by roster.

Monroe County

Emergency Operating Center (EOC)

MEOC-1 Demonstrate the ability to communicate with all
(CO_5) appropriate locations, organizations, and field personnel.

Guidelines: Communications include RECS line, executive command line, Races, radios, telefax and commercial lines. The RECS line will be used to receive information from the licensee. The commercial telephone will be used as a backup. The County will also communicate with the U.S. Coast Guard and the Ontario-Midland Railroad. (Note: no simulated failures are to be evaluated).

MEOC-2 Demonstrate the ability to mobilize staff and activate
(CO-1) facilities promptly.

Guidelines: Proper use of call-up procedures, and timely arrival of staff and setting up of the EOC. Albany based staff will arrive at the Alert ECL.

MEOC-3 Demonstrate the adequacy of facilities and displays to
(CO-4) support emergency operations

Guidelines: Ensure measures are in place to control access to EOC areas; identification badges are verified; ingress and egress logs are maintained. Messages are transmitted in an accurate and timely manner, messages are properly logged, status boards are accurately maintained and updated, appropriate briefings are held and incoming personnel are briefed. Sufficient equipment (e.g., furniture, space, lighting, telephones and status boards) should be available.

MEOC-4 Demonstrate the ability to make decisions and to
(CO-3) coordinate emergency activities.



Guidelines: Individual acting in command and control for decision making must be clearly in charge taking into account all critical parameters (e.g., evacuation time estimates, available resources, met data, etc.).

MEOC-5
(CO-2) Demonstrate the ability to fully staff the facility and maintain staffing around the clock.

Guideline: 24 hour capability can be shown by roster

MEOC-6
(CO-10) Demonstrate the ability to project radiation dosage to the public via plume exposure, based on plant data and field data, and to determine appropriate protective measures, based on PAGs available shelter, evacuation time estimates, and other appropriate factors.

Guideline: Dose assessment and accident evaluation personnel will provide these recommendations to decision makers.

MEOC-7
(CO-13) Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an instructional message, within 15 minutes.

Guidelines: Coordination of public alerting and the prompt alert notification system with Wayne County and New York State. The EBS will be activated and each County will simulate activation of the sirens.

MEOC-8
(CO-15) Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the 10 mile EPZ.

Guideline: Command and Control will analyze the situation including staff input and issue a decision to the respective agencies for implementation.

MEOC-9
(CO-16) Demonstrate the organizational ability to deal with impediments to evacuation, such as inclement weather or traffic obstruction. Resources will actually be deployed.

Guideline: Command and Control will analyze situation including staff input and issue a decision to the respective agencies for implementation.

MEOC-10
(CO-17) Demonstrate the organizational ability necessary to control access to an evacuated area.

Guideline: No resources will be deployed.



MEOC-11 Demonstrate the ability to identify the need for,
(CO-32) request and obtain State assistance(if warranted).

Guideline: This ability will be demonstrated if the County should determine that this action is necessary.

FIELD ACTIVITY

MCFA-1 Demonstrate the ability to continuously monitor and
(CO-20) control emergency worker exposure

Guidelines: Emergency workers should have high range and low range dosimeters, TLD's, know reporting exposure limits to supervisors and the proper use of dosimeters. Emergency workers are knowledgeable on procedures and systems for obtaining permission to exceed limits as defined by respective county plans. This guideline will also include State emergency workers.

MCFA-2 Demonstrate the ability to mobilize and deploy field
(CO-6) monitoring teams in a timely manner.

Guideline: Proper use of the call out system, equipment checkout, team briefing on current status and dispatching to radiological field monitoring sample points.

MCFA-3 Demonstrate appropriate equipment and procedures for
(CO-7) determining ambient radiation levels.

Guidelines: Teams members shall set-up and operate the instruments correctly including recording of data and reporting of data to the EOC.

MCFA-4 Demonstrate appropriate equipment and procedures for
(CO-8) measurement of airborne radioiodine concentrations as low as 10^{-7} uCi/CC in the presence of noble gas.

Guidelines: Teams shall set-up equipment and collect an air sample, read the sample and record the data, and transmit the data to the EOC.

MCFA-5 Demonstrate the ability to provide backup public
(CO-13) alerting procedures, If necessary, in the event of partial siren system failure.

Guidelines: This activity is to simulated. The police will be notified but not deployed. Discussion will take place at the EOC



MCFA-6 Demonstrate that information on emergency actions has
(CO-14) has been provided to permanent and transient
population within the 10 mile EPZ.

Guidelines: Brochure distribution documentation from
NYS to FEMA will meet this objective. Additionally,
the annual certification will serve to verify that
information has been distributed.

MCFA-7 Demonstrate the organizational ability and resources
(CO-17) necessary to establish a traffic control point.

Guidelines: Traffic control point will be set up and
observed.

MCFA-8 Demonstrate the ability to supply and administer KI,
(CO-21) if the decision has been made to do so.

Guidelines: The decision making process for KI usage
will be discussed after the release occurs. Emergency
workers should know who will direct them to take KI.

MCFA-9 Demonstrate the organizational ability and resources
(CO-15) necessary to manage an orderly evacuation of all or
part of the plume EPZ.

Guidelines: Messages will be inserted at the County
EOC to the Command and Control. Information will be
passed to the appropriate agency for action and
dispatching of one (1) bus run.

MCFA-10 Demonstrate a sample of resources necessary to deal
(CO-16) with impediments to evacuation, as inclement weather
or traffic obstruction.

Guidelines: Appropriate resources are dispatched to
scene.

MCFA-11 Demonstrate the adequacy of procedures for registration
(CO-27) and radiological monitoring of evacuees over a 24 hour
period.

Guidelines: Within a twelve (12) hour period, there
should be enough personnel and equipment capable of
monitoring all residents and transients in the plume
exposure EPZ arriving at the reception center. A
center not utilized in previous exercises should be
used for this exercise. This will be set up out of
sequence with the exercise.



MCFA-12
(CO-28)

Demonstrate the adequacy of facilities for mass care of evacuees.

Guidelines: At least three ARC staff will arrive and function as shelter managers, registrar and staff members. Once the ARC is told how many people to expect, they should have access to personnel to cover the initial 24 hour operation, explain support agreement and have floor plans for set up of the center. This will be set up out of sequence with the exercise.

MCFA-13

Demonstrate adequate procedure and equipment for disposal of contaminated waste (e.g., clothing).

MCFA-14
(CO-19)

Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ.

Observer will go to the bus garage, contact dispatcher, ride bus (van) to the school and then to school reception center. Bus drivers knowledge of dosimetry will be observed.

Wayne County

Emergency Operating Center (EOC)

WEOC-1
(CO-5)

Demonstrate the ability to communicate with all appropriate locations, organizations, and field personnel.

Guidelines: See MEOC-1, (CO-5)

WEOC-2
(CO-1)

Demonstrate the ability to mobilize staff and activate facilities promptly.

Guidelines: See MEOC-2, (CO-1)

WEOC-3
(CO-4)

Demonstrate the adequacy of facilities and displays to support emergency operations.

Guidelines: See MEOC-3, (CO-4)

WEOC-4
(CO-3)

Demonstrate the ability to make decisions and to coordinate emergency activities.

Guidelines: See MEOC-4, (CO-3)

WEOC-5
(CO-2)

Demonstrate the ability to fully staff the facility and maintain staffing around the clock.

Guideline: See MEOC-5, (CO-2)



WEOC-6
(CO-10)

Demonstrate the ability to project radiation dosage to the public via the plume exposure, based on plant data and field data, and to determine appropriate protective measures, based on PAGs, available shelter, evacuation time estimates, and other appropriate factors.

Guideline: See MEOC-6, (CO-10)

WEOC-7
(CO-13)

Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an instructional message within 15 minutes.

Guideline: Coordination of the public alerting and the prompt alert notification system with Monroe County and New York State. The EBS will be activated and each County will simulate activation of the sirens.

WEOC-8
(CO-15)

Demonstrate the organizational ability and resources necessary to manage an orderly evacuation of all or part of the 10-mile EPZ.

Guideline: See MEOC-8, (CO-15)

WEOC-9
(CO-16)

Demonstrate the organizational ability to deal with impediments to evacuation, such as inclement weather or traffic obstruction.

Guideline: This activity will be simulated.

WEOC-10
(CO-17)

Demonstrate the organizational ability necessary to control access to an evacuated area.

Guideline: See WEOC-9

WEOC-11
(CO-32)

Demonstrate the ability to identify the need for, request and obtain State assistance (if warranted).

Guideline: See MEOC-12, (CO-32)

WEOC-12
(CO-23)

Demonstrate the ability to effect an orderly evacuation of onsite personnel.

Guidelines: Coordination with NFO of evacuees, per the plan, is to be observed.

FIELD ACTIVITY

WCFA-1
(CO-20)

Demonstrate the ability to continuously monitor and control emergency worker exposure.

Guidelines: See MCFA-1, (CO-20)

WCFA-2 Demonstrate the ability to mobilize and deploy field
(CO-6) monitoring teams in a timely manner.

Guidelines: See MCFA-2, (CO-6)

WCFA-3 Demonstrate appropriate equipment and procedures for
(CO-7) determining ambient radiation levels.

Guidelines: See MCFA-3, (CO-7)

WCFA-4 Demonstrate appropriate equipment and procedures for
(CO-8) measurement of airborne radioiodine concentrations as low as 10^{-7} uCi/CC in the presence of noble gas.

Guidelines: See MCFA-4, (CO-8)

WCFA-5 Demonstrate the ability to provide backup public
(CO-13) alerting procedures, if necessary, in the event of a partial siren system failure.

Guideline: The route alert drivers, members of the Ontario Fire Department, will be interviewed at their point of deployment about route alerting procedures. Updated maps will be observed, adequacy of the number of vehicles and also knowledge of KI procedures and exposure control will be ascertained.

WCFA-6 Demonstrate the ability to formulate and distribute
(CO-14) appropriate instructions to the public in a timely fashion.

Guidelines: See MCFA-6, (CO-14)

WCFA-7 Demonstrate the organizational ability and resources
(CO-17) necessary to control access to an evacuated area.

Guidelines: This is to be simulated.

WCFA-8 Demonstrate the ability to supply and administer KI,
(CO-21) if the decision has been made to do so.

Guideline: See MCFA-8, (CO-21)

WCFA-9 Demonstrate the organizational ability and resources
(CO-15) necessary to manage an orderly evacuation of all or part of the plume EPZ.

Guideline: See MCFA-9, (CO-15)

WCFA-10
(CO-16)

Demonstrate a sample of resources necessary to deal with impediments to evacuation, as inclement weather or traffic obstruction.

Guideline: This activity will be simulated.

WCFA-11
(CO-27)

Demonstrate the adequacy of procedures for registration and radiological monitoring of evacuees over a 24 hour period.

Guidelines: See MCFA-11, (CO-27).

WCFA-12
(CO-28)

Demonstrate the adequacy of facilities for mass care of evacuees.

Guidelines: See MCFA-12, (CO-12)

WCFA-13

Demonstrate adequate procedure and equipment for disposal of contaminated waste (e.g., clothing).

WCFA-14
(CO-29)

Demonstrate adequate equipment and procedures for decontamination of emergency workers, equipment and vehicles.

Guidelines: Procedures for disposal of liquid waste should be demonstrated.

WCFA-15
(CO-19)

Demonstrate the organizational ability and resources necessary to effect an orderly evacuation of schools within the plume EPZ.

Guidelines: See MCFA 14.

Joint News Center

JNC-1
(CO-1)

Demonstrate the ability to mobilize staff and activate the facility promptly.

Guidelines: The County staff will respond in accordance with their notification procedures. The State PIO will demonstrate an appropriate arrival time, at the Alert ECL.

JNC-2
(CO-24)

Demonstrate the ability to brief the media in a clear, accurate, and timely manner.

Guideline: Assure that all necessary information is presented to the media in press releases in a timely manner. All required personnel will be present at the briefings unless EBS messages or news release preparation is determined by respective PIO to take priority.

JNC-3
(CO-5)

Demonstrate the ability to communicate with all appropriate locations, organizations and field personnel.

Guidelines: Coordination among personnel to ensure information for release is known to all Counties, State and participating licensee (i.e., "sign off procedures").

JNC-4
(CO-26)

Demonstrate the ability to establish and operate rumor control in a coordinated fashion.

Guideline: The State, Counties, and licensee will respond accurately to incoming calls based on scenario information.

JNC-5
(CO-2)

Demonstrate the ability to fully staff facilities and maintain staffing around the clock.

Guideline: 24 hour staffing is to be provided via shift change. NYS will demonstrate 24 hour coverage via roster.

JNC-6
(CO-4)

Demonstrate the adequacy of facilities and displays to support emergency operations.

Guideline: This activity will be part of the utility's evaluation and will not appear in the off site evaluation

JNC-7
(CO-13)

Demonstrate the ability to alert the public within the 10-mile EPZ, and disseminate an initial instructional message, within 15 minutes.

Guidelines: The initial simulated alert signal and the (test) instructional message issued via the Emergency Broadcast System must be aired within 15 minutes after the authorized public officials reach a decision which requires activating the alert and notification system. Subsequent messages must be read in 15 minutes after the decision to do so has been made (i.e., this will have been met if the first two words of the message are read into the telephone at the JNC prior to the end of the 15 minutes. (i.e. the first two words have been read into the telephone at the JNC.



JNC-8

Demonstrate the ability to formulate and distribute appropriate instruction to the public in a timely manner..

Guideline: Information and recommendations shall be prepared and provided to the public in a manner consistent with the needs for public response.. This may be accomplished through EBS messages, news releases, newspapers ,telephone and/or radio and television.



TABLE 1-1

STATE OF NEW YORK
AND
ROCHESTER GAS AND ELECTRIC CORPORATION

1987 INGESTION PATHWAY EXERCISE

	<u>PROPOSED ACTIVITIES</u>		<u>AFFECTED</u>	<u>DOE</u>
	<u>RG&E</u>	<u>NYS</u>	<u>COUNTIES</u>	
Classification of Emergency	Actual*	Actual*		
Notification of				
Offsite Agencies	Actual*	Actual*		
Call up of Personnel	Actual**	Actual**	Actual**	Actual**
Activate Organization	Actual**	Actual**	Actual**	Actual**
Maintain Security				
RCS Post Accident Sample	Simulate*			
RCS Post Accident Sample				
Analysis	Simulate*			
Use of Protective Equipt.	Simulate***	Simulate***		
Carry Out Dose Assessment	Actual**	Actual**		Actual**
PAG Recommendation	Actual	Actual		
Operate Joint News Center				
EBS Message		Simulate		
Dispatch Field Survey Teams	Simulate	Actual-5		
Exchange of Field Data	Actual	Actual		Actual
Field Team Communication	Simulate	Actual		Actual
Personnel Monitoring	Simulate	Actual		

- * To be provided by Ingestion Pathway Exercise Controllers as part of Initial Exercise Briefing.
- ** Selective personnel and facility activation to be conducted in accordance with Ingestion Pathway Exercise ground rules.
- *** Protective Clothing in general will be simulated. FEMA and NRC observers may request that some teams actually don or describe use of equipment. These requests shall be directed to the controller for the team.



SECTION 2.0

EXERCISE INFORMATION



2.0 EXERCISE INFORMATION

2.1 Exercise Participants

The participants in the Exercise will include the following:

2.1.1 Off-Site Agencies/Organizations

Participation of the following Agencies/Organizations is expected:

1. State

- a. New York State Department of Health
- b. New York State Department of Agriculture and Markets
- c. New York State Department of Environmental Conservation
- d. New York State Department of Transportation
- e. New York State Emergency Management Office
Lake District and Central District Offices
- f. New York State Radiological Emergency Preparedness Group.

2. Federal

- a. Department of Energy Radiological Assistance Program (RAP) Team Representatives from the Brookhaven Area Office

3. Local

- a. Wayne County
- b. Monroe County
- c. Other selected counties within the 50-mile radius EPZ surrounding Ginna Station, which are affected by the scenario release plume.

2.1.2 Rochester Gas and Electric Corporation

1. Facilities Management and Support Personnel

- a. Technical Support Center (TSC) (OPTIONAL):
Plant Radiochemist and/or alternate to coordinate environmental sampling processing as appropriate;



- b. Emergency Operations Facility (EOF) :
EOF/Recovery Manager, selected EOF managers,
EOF Dose Assessment staff and radiological
environmental monitoring teams dispatched
from the EOF;
- c. Joint Emergency News Center (JENC) (OPTIONAL) :
Corporate Spokesperson, News Center Manager
and selected News Center staff;

2.2. Exercise Organization

The organization for this Exercise will consist of the Exercise Coordinator, the Controllers, the Players, and the Observers, as follows:

2.2.1 The Exercise Coordinator will coordinate Exercise preparations including the development of the scenario and controller input messages. He will control all aspects of the conduct of the Exercise, prepare a consolidated evaluation and critique report at the conclusion of the Exercise, and prepare and follow up on an itemized list of corrective actions recommended as a result of the evaluation and critique.

2.2.2 Controllers are qualified personnel selected to perform functions as follows:

1. A Lead Controller is assigned to each emergency response facility. The Lead Controller is responsible for all Controller, Evaluator, and Observer activities for that facility and, if appropriate, its associated teams. Controllers for teams or subareas of a facility report to the Lead Controller of that facility.
2. The Controllers will deliver "Exercise Messages" to designated players at various times and places during the Exercise, inject or deliver additional messages as may be required to initiate the appropriate player response and keep the Exercise action moving according to the scenario and Exercise objectives, observe the Exercise at their assigned locations, and prepare evaluation forms. Controllers/observers submit written recommendations on corrective actions to the Lead Controller, who in turn summarizes all comments for submittal to the Exercise Coordinator prior to the scheduled critique. The Controllers will be provided with a list of instructions in the Exercise Scenario.



3. Persons designated as Controllers/Observers for a given function will also be assigned as Evaluators of that function when feasible. Evaluators will record their observations using an evaluation form and provide recommendations on corrective actions to the Lead Controller in whose facility they evaluate exercise performance on the basis of standards or requirements contained in the appropriate Emergency Plan, Implementing Procedures, and Exercise messages and as described herein. They will take steps, whenever possible, to collect data on the time and motion aspects of the activity observed for post-Exercise use for implementing improvements.

Controllers will be identified by wearing green arm bands with white lettering stating "Controller."

- 2.2.3 Players include Ginna Station and other Rochester Gas and Electric Corporation personnel assigned to perform emergency functions, as described in the Emergency Plan and Implementing Procedures. Players from off-site organizations and agencies (county, State, and private industry) are participants in the Exercise as described in their respective Emergency Plans and Standard Operating Procedures.

- 2.2.4 Observers from The Rochester Gas and Electric Corporation and other organizations may be assigned to participate in the Exercise solely for the purpose of observing/evaluating Exercise activity. They will be provided with orientation information and appropriate exercise publications.

Observers will be identified by wearing maroon arm bands with white lettering. Federal agency observers will be identified by wearing arm bands with white lettering stating "FEMA" or "NRC".

Visitors from the Rochester Gas and Electric Corporation and other organizations may be assigned, on a limited basis, for the sole purpose of observing exercise activities for personal education.

Visitors will be identified by wearing white arm bands with black lettering stating "Visitor". They will be provided with orientation information and appropriate exercise publications.

- 2.2.5 Requests to participate as a Visitor should be made in writing and contain the Visitor's full name, home address and phone number, and organizational affiliation. Requests to participate as Visitors must be submitted to the RG&E Corporate Emergency Planner (CEP) no later than one week before the Exercise.



2.3 Emergency Response Facilities

During the Exercise, special facilities must be activated to manage, assess, and support emergency response.

New York State Facilities

The New York State Emergency Response Facilities are:

1. State Emergency Operations Center

In the event of a nuclear power plant incident, command and control operations are managed from the State EOC in Albany. The Chairman of the Disaster Preparedness Commission as the Governor's designee and other State Officials direct the emergency management response and recovery operations. The Command Room is augmented by State and District EOC operations, radiological assessment and evaluation, communications and public information.

2. State Emergency Management Office Lake District Office

The SEMO Lake District Office, located in Newark, NY, will be the staging area location for State radiological survey/sampling teams performing Ingestion Pathway monitoring activities. Coordination of such monitoring missions with respect to operations, communications and sample delivery to the State Laboratory for analysis will be directed from the SEMO Lake District Office by the appropriate agency representative.

3. State Emergency Management Office Central and Western District Office

The SEMO Central and Western District Offices will receive radiological emergency information from State Headquarters on a periodic basis. Command Room decisions and operational requirements will also be provided to SEMO District Office personnel for appropriate action. SEMO District Offices will be the focal point for coordination with County Emergency Management Officials.

4. State Laboratory

The State Laboratory in Albany will be the Central facility for field sample receipt, preparation and analysis.



Rochester Gas and Electric Corporation Facilities

The Rochester Gas and Electric facilities are:

1. Technical Support Center (TSC)

When emergency conditions escalate to an Alert status or higher, coordination of the emergency response will shift from the Control Room to the TSC, located on the mezzanine level of the Turbine Building. The TSC is the location from which technical management personnel utilize information on plant status provided in the TSC to support actions being performed in the Control Room. The TSC serves as the primary communications source to the NRC, OSC, EOF, and off-site agencies, and will perform other functions of the EOF until the EOF is activated. During Recovery, the TSC may remain partially activated to support various post-accident maintenance, clean-up, assessment and survey/sampling operations.

2. Emergency Operations Facility (EOF)

The EOF, located in the basement of 49 East Avenue in Rochester will be activated for emergency conditions classified as a Site Area Emergency or General Emergency (optional for the Alert status). The EOF/Recovery Manager directs the activities of the EOF/Recovery Organization from the EOF. The TSC Emergency Coordinator reports to the EOF/Recovery Manager. The EOF is the command post for coordination of response measures with off-site organizations, assessment of radiological and environmental conditions and determination of recommended protective actions for the public. The EOF also provides direction and management of Recovery operations and would be the main coordinating facility for utility Ingestion Pathway monitoring and assessment activities.

3. Joint Emergency News Center (JENC)

The JENC located at 89 East Avenue in Rochester provides the point of contact for the coordinated release of news and information to the news media and the general public. The JENC is staffed by RG&E Corporation, county, State, and Federal officials and will be activated for emergency conditions classified as a Site Area Emergency or General Emergency (optional for the Alert status).



2.4 Exercise Conduct

2.4.1 Overview

The Ingestion Pathway Exercise will simulate a major radiological incident at the Ginna Nuclear Power Plant which will start with a postulated release that has terminated, but has resulted in significant levels of deposited off-site radioactivity.

During the course of the Exercise, in order to evaluate coordination with appropriate State and local agencies, environmental conditions will be presented to participants which require assessment and decisionmaking by on-site and off-site emergency response organizations/ agencies. The Exercise will also require deployment of State and utility radiological survey teams for off-site monitoring.

The conduct of the Exercise will demonstrate the effectiveness of selected organizations, personnel, functions, and/or activities of the appropriate Emergency Plans and Implementing Procedures.

2.4.2 Actions

Emergency response actions during the simulated emergency will include: assessment of off-site radiological consequences; deployment of radiological environmental monitoring teams; recommendation of appropriate ingestion pathway protective actions; and preparation of public health information to be disseminated to the media.

2.4.3 Communications

The Exercise will also demonstrate the effective use of communications systems. An actual emergency operation usually requires the extensive use of both telephone and radios. The telephone is the primary means of communication between emergency response organizations. Radio communications are also an important link in conducting radiological monitoring efforts throughout the affected downwind area. Separate telephone numbers will be used for Controller communications to prevent the Players from learning in advance of the situation to which they are to be subjected during the Exercise. Close cooperation and coordination among Controllers is essential due to the number of persons assigned to the Controller role.

2.4.4

Controllers

Lead Controllers will be stationed in the State EOC, the SEMO Lake District Office and EOF. Only Lead Controllers can modify exercise messages or initiate free play messages.

2.4.5

Players

The success of the Exercise is largely dependent upon player reaction, player knowledge of their appropriate Emergency Plan and Implementing Procedures, and an understanding of the purpose of the Exercise. Initial conditions which will affect player action or reaction will be provided to the players at the time the Exercise begins. However, most of the elements of the Exercise play will be introduced through the use of controlled Exercise message forms and messages generated by Players as a result of the particular emergency activity performed. Players, therefore, are responsible for initiating actions during the Exercise in accordance with instructions, responsibilities, and tasks for their particular function. Each Player will advise his/her Controller prior to performing required emergency actions during the play of simulated activities to ensure that the Player is credited for his/her actions.

Players are reminded not to be excessively concerned with the mechanics or cause of the exercise scenario. This Exercise is designed to evaluate the Emergency Plan, Implementing Procedures, and emergency preparedness training program and not the probability, feasibility, or detailed mechanics of the simulated accident.

Additionally, the Exercise is a training vehicle for New York State, County and Rochester Gas and Electric Corporation personnel to practice coordinating with outside organizations in a simulated emergency environment. Players should note any needed improvements that come to their attention during the Exercise and submit them to the appropriate Controller at the conclusion of the Exercise.



2.5 Precautions and Limitations.

This section provides information for all Exercise Controllers and Observers related to the rules and guidelines to be followed throughout the conduct of this Exercise. Prior to initiation of the Exercise, a pre-exercise briefing will be held to review the entire Exercise process with all the Exercise Controllers and Observers identified in this manual.

- A. Should at any time during the course of the conduct of this exercise, an actual emergency situation arise, all activities and communications related to the Exercise will be suspended. It will be the responsibility of any Exercise Controller or Observer that becomes aware of an actual emergency to suspend exercise response in his/her immediate area and to inform the Lead Exercise Controller of the situation. Upon notification of an actual emergency, the Lead Exercise Controller may notify all other Controllers/ Observers to suspend all exercise activities. The Lead Exercise Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the exercise.
- B. Should, at any time during the course of the conduct of this exercise, an Exercise Controller or Observer witness an exercise participant undertake any action which would, in the opinion of the Controller/Observer, place either an individual or component in an unsafe condition, the Controller/ Observer is responsible for intervening in the individual's actions and terminating the unsafe activity immediately. Upon termination of the activity, the Controller/-Observer is responsible for contacting the Lead Exercise Controller and informing them of the situation. The Lead Exercise Controller will make a determination at that point whether to continue, place a temporary hold on, or terminate the exercise.



- C. All telephone communications, radio transmissions, and public address announcements related to the exercise must begin and end with the statement, "This is an exercise." Should a Controller or Observer witness an exercise participant not observing this practice, it is the Controller's/Observer's responsibility to remind the individual of the need to follow this procedure.
- D. Any motor vehicle response to this exercise, whether it be communication vehicles, police/security vehicles or field monitoring teams, should observe all normal motor vehicle operating laws including posted speed limits, stop lights/signs, one way streets, etc.
- E. Should any on-site security actions be required in response to this exercise participants are to cooperate as directed by the Security Force, and security representatives are to be prudent and tolerant in their actions.
- F. Exercise participants are to inject as much realism into the exercise as is consistent with its safe performance; however, caution must be used to prevent over-reaction.
- G. Care must be taken to assure that any non-participating individuals who may observe exercise activities or overhear exercise communications are not misled into believing that an actual emergency exists. Any Exercise Controller or Observer who is aware of an individual or group of individuals in the immediate vicinity who may have become alarmed or confused about the situation, should approach that individual or group and explain the nature of the exercise and its intent.



2.6 Evaluation and Critique

The Exercise will be evaluated by Controllers/Observers who have expertise in, or qualification to evaluate the activity in their assigned location. Controllers/ Observers will evaluate exercise performance on the basis of requirements contained in the Emergency Plan Implementing Procedures, and exercise messages. Controllers/Observers will prepare evaluation forms and provide recommendations on corrective actions to the Exercise Coordinator.

After the Exercise is completed, the Exercise Coordinator will conduct a post-Exercise critique. Deficiencies in the Emergency Plan, Implementing Procedures, the emergency preparedness training program, facilities, equipment and/or other areas will be identified through the critique process. The deficiencies will be documented by the Exercise Coordinator and corrected by the individuals who have responsibility in the area of the identified deficiency.

Controller and Observer information is contained in Section 5.0.

The schedule for the critiques is shown in Section 6.0.



SECTION 3.0

TRAVEL INFORMATION



3.0 TRAVEL INFORMATION

This section of the Drill Manual provides travel information to those individuals from RG&E, other utilities, local/State/Federal government, and/or other organizations who will participate/observe the drill.

Permission for Visitors to observe the Drill must be obtained from the Corporate Emergency Planner, Rochester Gas and Electric Corporation, 89 East Avenue, Rochester, New York 14649-0001.

3.1 Directions to the Ginna Nuclear Station

The Ginna Station is located on the southern shore of Lake Ontario in Wayne County, New York, approximately 24 miles northeast of Rochester, New York (see Figure 3.1).

3.1.1 Air

Several airlines provide passenger service to the Rochester-Monroe County International Airport.

3.1.2 Car

1. Several car rental agencies are available at the Rochester-Monroe County International Airport to provide rental vehicles for ground transportation to the Ginna Station.
2. Persons traveling from the Rochester-Monroe County International Airport via auto should take State Highway 204 East to Interstate 390 South. Interstate 390 becomes Interstate 590 as one proceeds around the outer loop. Follow I-590 to State Highway 590 to State Highway 104 East. Follow State Highway 104 to State Highway 350 (Ontario-Center Road). Turn left (North) and proceed to the Ginna Station. Total distance is approximately 40 miles.

3.2 Directions to the EOF, ESC and ENJC

3.2.1 AIR

From the Rochester-Monroe County Airport take 204 to 390 North, 490 East into the City onto the Inner-loop to the East Avenue Ramp to the third signal light. Turn right.



3.2.2 CAR

From the Thruway use Exits 45 or 46 into Rochester and the Inner-loop to the East Avenue ramp as in 3.2.1.

3.2.3 To get to the Emergency Operations Facility and Engineering Support Center go to the intersection of East Avenue and Chestnut Street (Black square on map). EOF and ESC are in 49 East Avenue. The Emergency Joint News Center is at 89 East Avenue (See Figures 3.2 and 3.3).

3.3 Accommodations

Hotel/motel accommodations may be obtained at the following locations:

Depot Hotel, Pittsford	716-381-9900
Marriott Hotel, Greece	716-225-6880
Red Roof Inn, Henrietta	716-359-1100

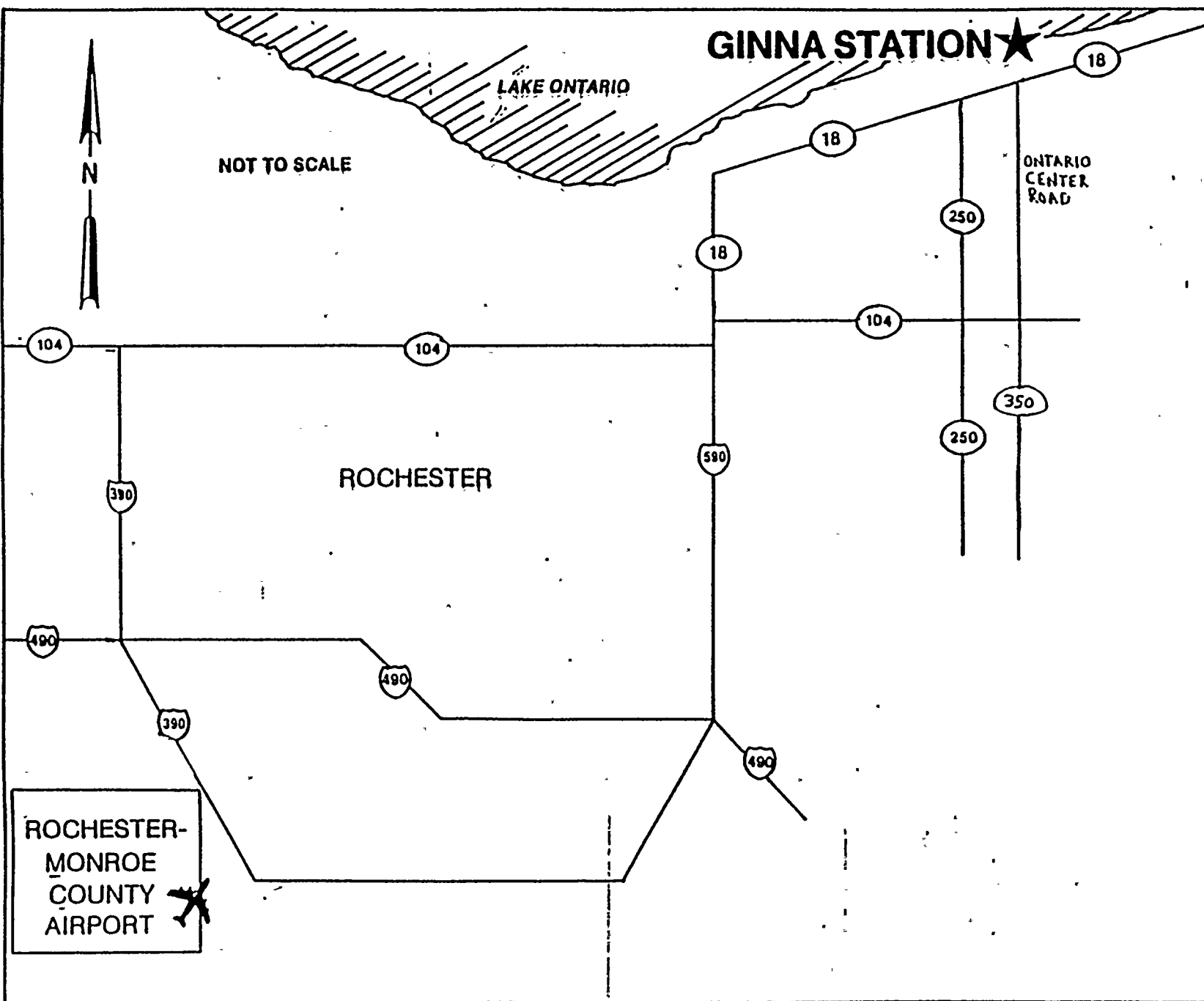
3.4 Directions to State Facilities

3.4.1 New York State Emergency Operations Center
State Office Building Campus
Public Security Building 22
Albany, NY
(518) 457-8909
(See Figures 3.4 and 3.5)

3.4.2 Lake District Office State
Emergency Management Office
Route 31, East of Newark, NY
(315) 331-4880
(See Figure 3.6)

3.4.3 Western District Office State
Emergency Management Office
Routes 5 or 33 to 221 State Street
Batavia, NY
(716) 343-1465
(See Figure 3.6)

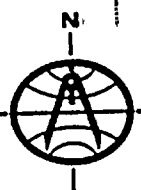




PLANT: **GINNA STATION**
LICENSEE: **Rochester Gas & Electric Corp.**

LOCATION: **Ontario, N.Y.**

FIGURE 3.1



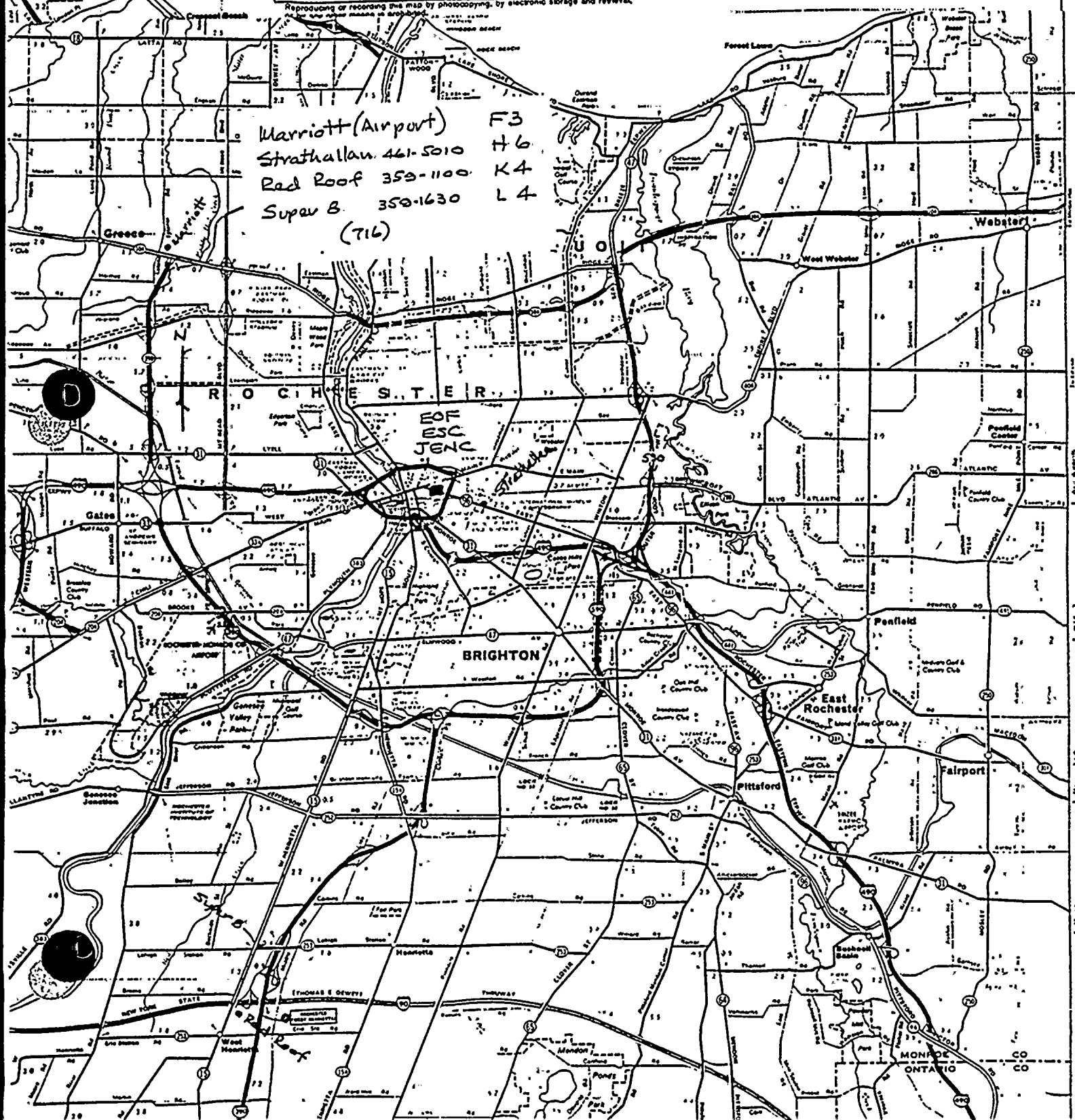
ROCHESTER AND VICINITY

Legend:
— Limited Access Divided Highways
(Indicated as Limited Access Divided Highways legend on Buffalo-Henry Falls map of left)
— Other Divided Highways
— National Interstate Highways
— U.S. Highways
— State Highways
— County Trunk Highways
— Mileage on Road between Points
— One inch equals approximately 1.5 miles
Scale 0 1 2 3 Miles
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TOWNS	
Amherst	2.5
Buffalo	2.5
Canastota	2.5
Chenango	2.5
Delaware	2.5
Dundee	2.5
East Rochester	2.5
East Tonawanda	2.5
Getzville	2.5
Hempstead	2.5
Marshall	2.5
North Tonawanda	2.5
Pittsford	2.5
Pittsford Hamlet	2.5
Porter	2.5
South Tonawanda	2.5
West Tonawanda	2.5
Westfield	2.5
Webster	2.5
West Webster	2.5
Wood Webster	2.5
Yates	2.5
York	2.5
Yorkville	2.5
Zenith	2.5

POINTS OF INTEREST	
Amherst	2.5
Buffalo	2.5
Canastota	2.5
Chenango	2.5
Delaware	2.5
Dundee	2.5
East Rochester	2.5
East Tonawanda	2.5
Getzville	2.5
Hempstead	2.5
Marshall	2.5
North Tonawanda	2.5
Pittsford	2.5
Pittsford Hamlet	2.5
Porter	2.5
South Tonawanda	2.5
West Tonawanda	2.5
Westfield	2.5
Webster	2.5
West Webster	2.5
Wood Webster	2.5
Yates	2.5
York	2.5
Yorkville	2.5
Zenith	2.5

Marriott (Airport) F3
Strathallan 461-5010 H6
Red Roof 353-1100 K4
Super B 353-1630 L4
(716)



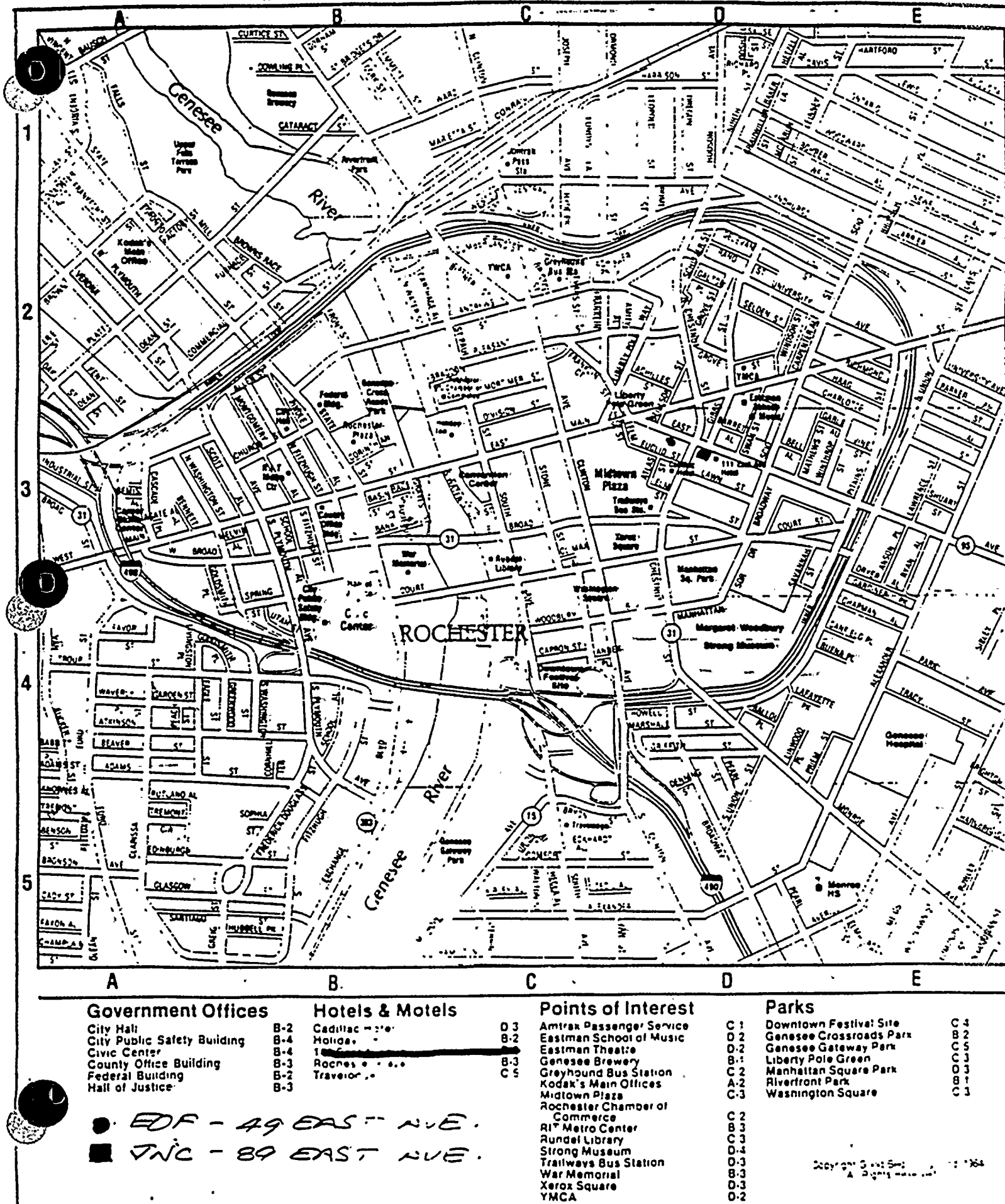


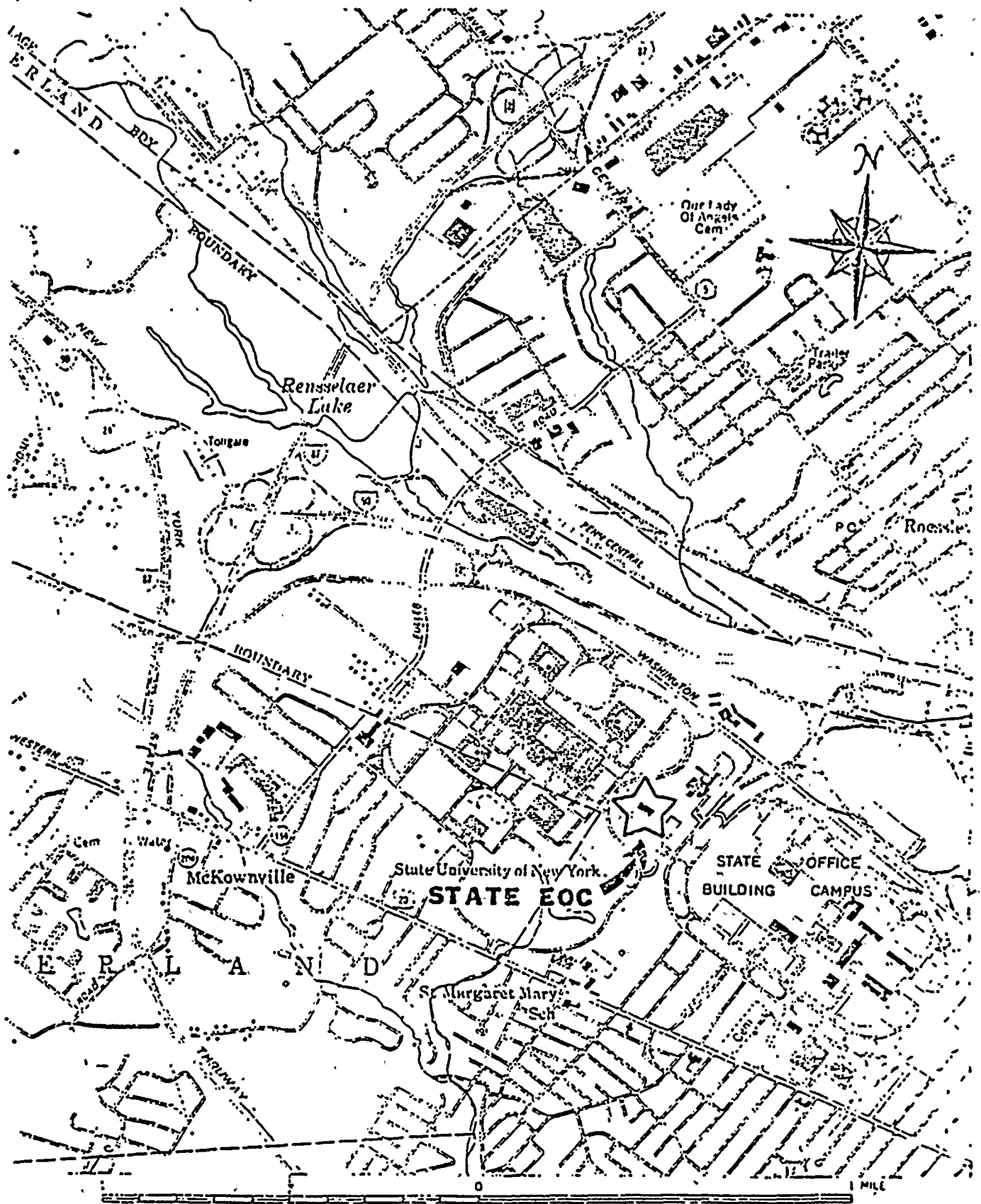
Figure 3.3

Figure 3.4

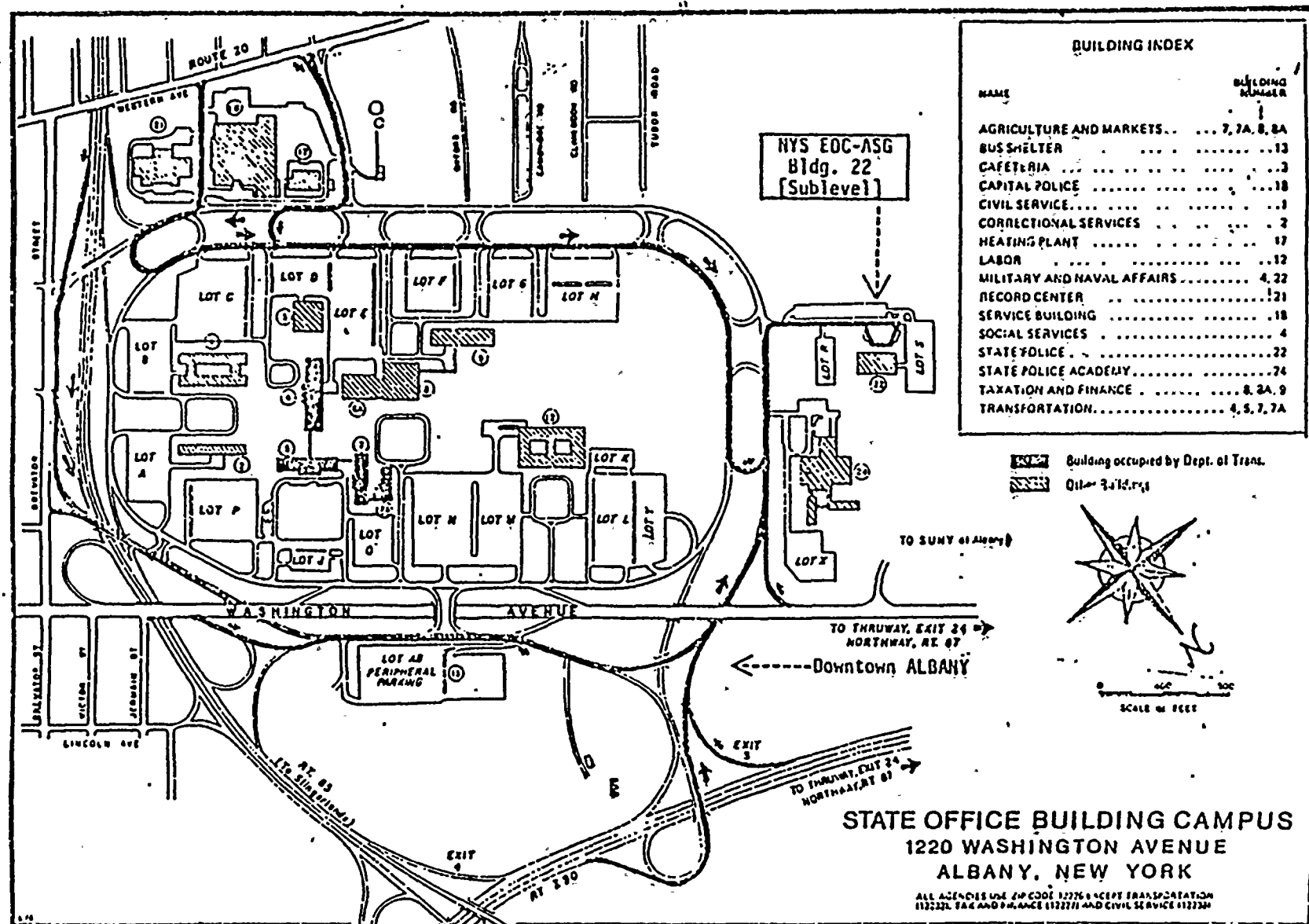
PART II. - SEC. I - Proc. D

ATTACHMENT 1

STATE EOC-ASG







FROM THE SOUTH or WEST take the N.Y.S. Thruway (I-87 Northbound/I-90 Eastbound) to Exit 24. After the toll booth proceed straight on I-90 to Exit 3.

- * FROM THE NORTH take the Adirondack Northway (I-87) South to Exit 1E. Proceed East on I-90 to Exit 3.
- * FROM DOWNTOWN ALBANY take I-90 Westbound to Exit 3.
- * FROM DOWNTOWN ALBANY take Washington Avenue to Western Avenue (Rte 20) to the State Office Building Campus.

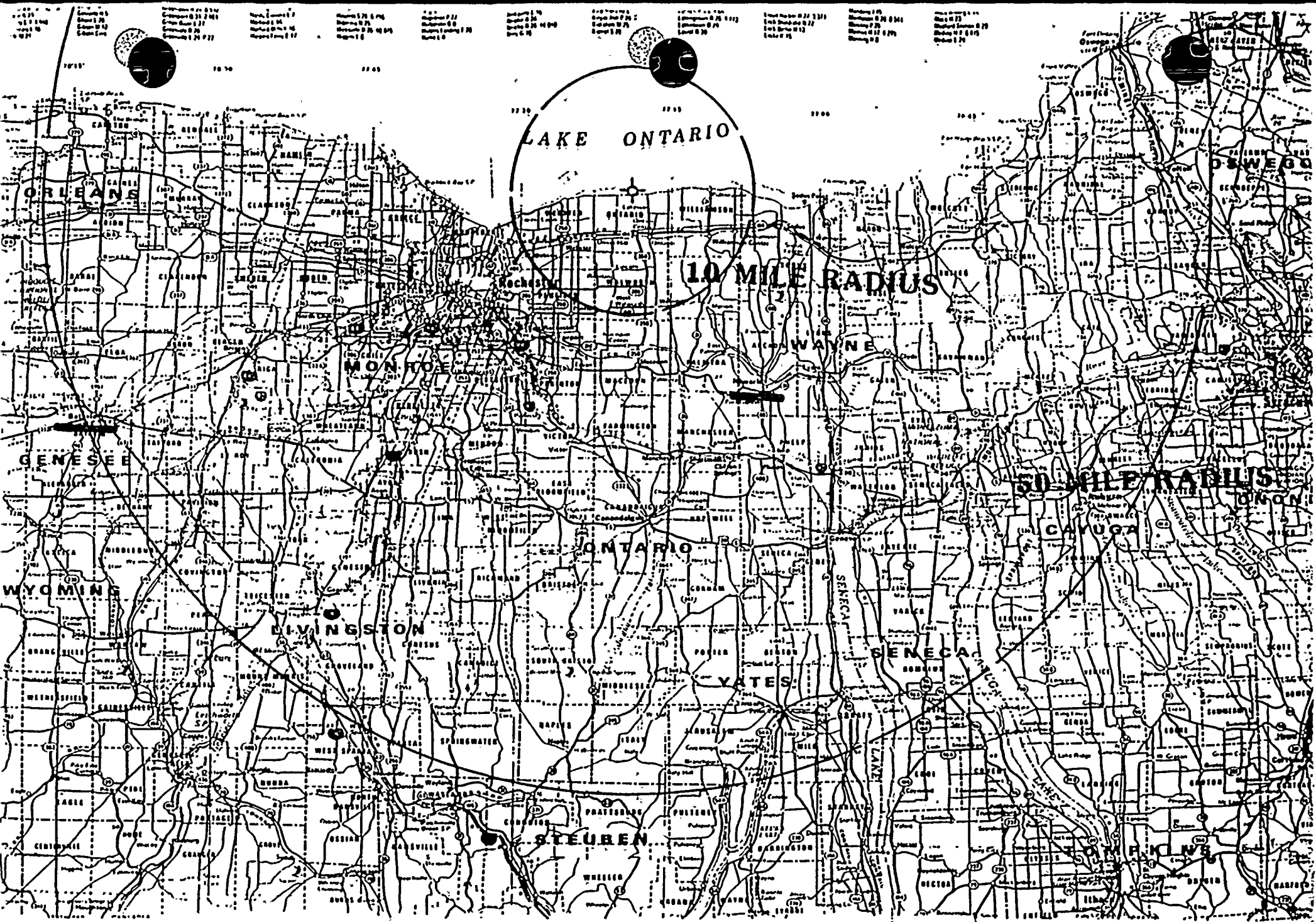


Figure 3.6



SECTION 4.0

REFERENCES/ABBREVIATIONS: - ACRONYMS

4.1 REFERENCES

- 4.1.1 10CFR 50.47, 50.54, Appendix E
- 4.1.2 44CFR 350.9
- 4.1.3 NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants
- 4.1.4 RG&E Nuclear Emergency Response Plan and Implementing Procedures, Rev. 5 (5/87)
- 4.1.5 GS Radiation Emergency Plan Implementing Procedures (SC)
- 4.1.6 GS License and Technical Specifications
- 4.1.7 GS Piping and Instrumentation Drawings
- 4.1.8 New York State Radiological Emergency Response Plan (10/84)
- 4.1.9 Monroe County Emergency Preparedness Plan (5/87)
- 4.1.10 Wayne County Radiological Response Plan (10/86)

4.2 ABBREVIATIONS - ACRONYMS

4.2.1	A/E	Architect Engineer
4.2.2	ALARA	As Low As Reasonably Achievable
4.2.3	ARMS	Area Radiation Monitor(s)
4.2.4	ATWS	Anticipated Transient Without Scram
4.2.5	CD	Civil Defense
4.2.6	CFR	Code of Federal Regulations
4.2.7	CV	Containment
4.2.8	CR	Control Room
4.2.9	DOE	Department of Energy
4.2.10	DOE-IRAP	DOE Interagency Radiological Assistance Plan
4.2.11	EAL(s)	Emergency Action Level(s)
4.2.12	EBS	Emergency Broadcast System
4.2.13	EC	Emergency Coordinator
4.2.14	EOC	Emergency Operations Center
4.2.15	EOF	Emergency Operations Facility
4.2.16	EPA	Environmental Protection Agency
4.2.17	EPC	Emergency Planning Coordinator
4.2.18	EPIP(s)	Emergency Plan Implementing Procedures(s)
4.2.19	EPZ	Emergency Planning Zone
4.2.20	ERF(s)	Emergency Response Facility(s)
4.2.21	ERPA	Emergency Response Planning Area
4.2.22	ESC	Emergency Survey Center
4.2.23	FEMA	Federal Emergency Management Agency
4.2.24	FRERP	Federal Radiological Emerg. Response Plan



4.2.25	GS	Ginna Station
4.2.26	HP	Health Physicist
4.2.27	HPN	Health Physics Network
4.2.28	HVAC	Heating Ventilation Air Conditioning
4.2.29	INPO	Institute of Nuclear Power Operations
4.2.30	JENC	Joint Emergency News Center
4.2.31	KI	Potassium Iodide
4.2.32	LOCO	Limiting Condition of Operation
4.2.33	LOCA	Loss of Coolant Accident
4.2.34	LWR	Light Water Reactor
4.2.35	MPC	Maximum Permissible Concentration
4.2.36	NRC	Nuclear Regulatory Commission
4.2.37	OSC	Operational Support Center
4.2.38	OOS	Out of Service (on-site)
4.2.39	OOS	Out of Sequence (off-site)
4.2.40	PAG(s)	Protective Action Guide(s)
4.2.41	PAR(s)	Protective Action Recommendation(s)
4.2.42	PASS	Post Accident Sampling System
4.2.43	PIO	Public Information Officer
4.2.44	PWR	Pressurized Water Reactor
4.2.45	RCP	Reactor Coolant Pump
4.2.46	RCS	Reactor Coolant System
4.2.47	RHR	Residual Heat Removal
4.2.48	RG&E	Rochester Gas and Electric Corporation
4.2.49	RST	Radiation Survey Team
4.2.50	SC	Site Contingency
4.2.51	SI	Safety Injection



4.2.52 SPING High Range Effluent Monitor

4.2.53 TSC Technical Support Center

SECTION 5.0

CONTROLLER AND EVALUATOR INFORMATION



5.0 CONTROLLER AND EVALUATOR INSTRUCTIONS

Each controller and evaluator should be familiar with the following:

- a. The basic objectives of the Drill.
- b. The assumptions and precautions being taken.
- c. The drill scenario, including the initiating events and the expected course of actions to be taken.
- d. The various locations that will be involved and the specific items to be observed when at those locations.
- e. The purpose and importance of the evaluation checklist and record sheets.

5.1 CONTROLLER INSTRUCTIONS

- 5.1.1 Controllers will position themselves at their assigned locations prior to the activation of the facility for which they have responsibility. (See Section 5.3).
- 5.1.2 Communications will be tested to ensure satisfactory communications among Controllers prior to Drill commencement. All watches and clocks will be synchronized with the Lead Control Room Drill Controller as part of the communications testing.
- 5.1.3 All Controllers will comply with instructions from the Lead Controller.
- 5.1.4 Each Controller will have copies of the messages controlling the progress of the drill scenario. No message shall be delivered out of sequence or other than as written unless specifically authorized by the Lead Controller.
- 5.1.5 Messages controlling the progress of the scenario are noted with a number. Contingency messages are noted with a number followed by the letter "X" (e.g., 10X).
- 5.1.6 Each on-site Controller will have copies of time-related plant data sheets. Data sheets will be distributed only in the Control Room. Radiological and meteorological data will also be provided at locations where it is normally available.
- 5.1.7 Controllers will not provide information to the Players regarding scenario development or resolution of problem areas encountered in the course of the simulated emergency. The Drill participants are expected to obtain information through



their own organizations and exercise their own judgement in determining response actions and resolving problems.

5.1.8 Some Players may insist that certain parts of the scenario are unrealistic. The Lead Controllers have the sole authority to clarify any questions regarding scenario content.

5.1.9 Each Controller will take detailed notes regarding the progress of the Drill and the responses of the Drill participants at their respective assigned locations. Each Controller will carefully note the arrival and departure time for participants, the times at which major activities or milestones occur, and problem areas encountered. The Controllers will retain their notes for the purposes of reconstructing the Drill chronology and preparing a written evaluation of the Drill.

5.2. EVALUATION INSTRUCTIONS

Each Controller/Evaluator will take detailed notes regarding the progress of the Drill and the response of the Drill participants at their respective assigned locations. Each Controller/Evaluator should carefully note the arrival and departure times of participants, the times when major activities or milestones occur, and problem areas encountered.

The standards below should be used by the controller/evaluator to evaluate assigned areas pertaining to the emergency response. A dual purpose will be served by this rating system. First, the capability of each facility or response area will be evaluated and second, the system will provide a vehicle for guiding and directing improvement. The rating scale is as follows:

Good - Personnel and equipment generally performed better than expected. Any errors or problems were minor and easily correctable.

Satisfactory - Personnel and equipment generally performed as expected. Any errors noted were not severe and could be corrected without undue labor or expense.

Unsatisfactory - Personnel and equipment generally performed below expectations and there were several significant deficiencies noted. The area's ability to carry out its functions was diminished.

NA - Not applicable to the situation or not observed.
Controller/evaluator comments should consider the demonstration of the following facility and team evaluation elements:

5.2.1 Facility

- o Accurate and timely determination of emergency action levels.
- o Timely activation and staffing for each emergency action level.
- o Familiarity of personnel with appropriate emergency instructions, duties and responsibilities.
- o Timely notification of Rochester Gas and Electric Corporation, local, State and Federal personnel/agencies (information updates performed).
- o Adequacy of internal information systems (i.e., message handling, displays, status boards and maps).
- o Properly controlled documentation and accurate, timely record-keeping.
- o Utilization of correct communications procedures and techniques.
- o Capability of facility supervisor/directors to interface with personnel and coordinate facility activities.
- o Consideration of personnel safety (exposure control).
- o Adequacy of interface between emergency response facilities.
- o Adequacy of equipment and supplies.
- o Timely initiation of on-site protective/corrective actions.
- o Development of protective action recommendations.
- o Radiological surveys and assessment of plant damage and hazardous conditions performed.
- o Timely request of emergency support services.
- o Coordinated, accurate and orderly dissemination of information to the news media.

Team

- o Timely notification and activation.
- o Adequacy of staffing.
- o Familiarity with appropriate emergency procedures, duties and responsibilities.
- o Availability and utilization of proper equipment.
- o Performance of contamination/decontamination control.
- o Proper interface with emergency support personnel.
- o Utilization of correct communications instructions and techniques.
- o Availability of reference documents to team members.
- o Utilization of proper radiological control practices (i.e., access control, protective clothing, shielding, stay time).
- o Performance of radiological surveys.
- o Timely and proper performance of damage assessment.
- o Properly maintained survey records and maps.
- o Adequacy of briefing sessions prior to dispatch.
- o Direction and control by team leaders.
- o Timely requests for off-site assistance.
- o Coordination and interface between emergency response team members.
- o Proper interface with plant supervisory personnel. Controllers/observers will record their comments for the purpose of reconstructing the Drill chronology and preparing a written evaluation of the Drill.

5.3 PERSONNEL ASSIGNMENTS

Figure 5.1 shows the Drill Controller Organization with the Lead Controller for each of the major Emergency Response Facilities.



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5.0 CONTROLLER ORGANIZATION

EMERGENCY OPERATIONS FACILITY

Dave Burke (Exercise Coordinator)

Wes Backus (Lead)

Diane Dreikorn (Dose Assessment) LILCO

New York State - Players & Controllers

State EOC

Jim Papile - Player

Bruce McQueen - Player

Larry Czech - Controller

Bob Borres - Controller (day 3)

State Health Dept. Lab

Bob Borres - Controller (day 2)

State Field Monitoring (day 2)

Ken Bergmann

George Brozowski

Bob Theesfeld

Dave Bell

Bill Wigley



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5.0 CONTROLLER ORGANIZATION

EMERGENCY OPERATIONS FACILITY

Dave Burke (Exercise Coordinator)
Wes Backus (Lead)
Diane Dreikorn (Dose Assessment) LILCO

State Controllers/Observers (Later)



SECTION 6.0

1987 GINNA FULL SCALE PLUME EXPOSURE PATHWAY EXERCISE

AND

NEW YORK STATE INGESTION PATHWAY EXERCISE



SECTION 6.0

1987 GINNA FULL SCALE PLUME EXPOSURE PATHWAY EXERCISE
AND
NEW YORK STATE INGESTION PATHWAY EXERCISE

SCHEDULE OF EVENTS

10/21	0900	OFFSITE PLAYER BRIEFING	EOF
	1330	ONSITE PLAYER BRIEFING	TSC
10/22	0900	CONTROLLER BRIEFING	EOF
WEEK OF 10/25 BEGINNING AT 0001 HOURS			
DAY 1	OFF HOURS UNANNOUNCED	PLUME EXPOSURE PATHWAY EXERCISE	ALL
DAY 1	AFTER EXERCISE TERMINATION AND BREAK	INGESTION PATHWAY BRIEFING (REDUCED STAFF)	EOF
DAY 2	0900	STATE FIELD MONITORING/SAMPLING ACTIVITIES (NO GINNA PARTICIPATION)	IPZ
DAY 3	0830	INGESTION PATHWAY UPDATE BRIEFING	ALBANY/EOF
	1000	INGESTION PATHWAY TABLETOP DRILL (START OF PLAY)	ALBANY
		REDUCED STAFF PARTICIPATION	EOF
DAY 4	0800	GINNA CRITIQUE	TRAINING CTR
	0900	NRC CRITIQUE	TRAINING CTR
	TBD	FEMA NEWS CONFERENCE	EJNC

PART II

SCENARIO INFORMATION



SECTION 7.0

INGESTION PATHWAY EMERGENCY EXERCISE SCENARIO



7.0

EXERCISE SCENARIO

Contents of this Section

- Section 7.1 Initial Conditions for the Ingestion Pathway
Scenario - (Background History Leading Up To
Major Ingestion Pathway Release)
- Section 7.2 Narrative Summary of Ingestion Pathway Exercise
Scenario
- Section 7.3 Scenario Timeline



STATE OF NEW YORK
INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

7.1 INITIAL CONDITIONS

(SAMPLE FORMAT FOR INITIAL BRIEFING TO PARTICIPANTS):

BACKGROUND HISTORY LEADING UP TO THE MAJOR INGESTION
PATHWAY RELEASE FROM THE R.E. GINNA NUCLEAR POWER PLANT

The following briefing information is intended for all Ingestion Pathway Exercise participants to detail the events which have occurred prior to the start of the Ingestion Pathway Exercise. In addition, preliminary field measurement data and in-plant sample data will be provided to the extent that such information would be available within the timeframe involved since the event occurred.

It is important for players to carefully review the briefing information provided, and seek clarification if necessary from the appropriate lead controller at each Emergency Response Facility.

The postulated event assumed for this Ingestion Pathway Exercise is based upon the accident scenario used for the 1987 Ginna Plume Exposure Pathway Exercise which has just been completed this week. However, in order to satisfy additional Exercise objectives required to demonstrate Ingestion Pathway response capabilities, the scenario timeline has been extended to allow other post-plume actions and decision-making to take place.

A more detailed summary of the above will now be provided.

7.1.1. DAY 1 - SUMMARY OF KEY EVENTS:

The Plume Exposure Pathway Exercise commenced at _____ hrs, DAY 1, with the following initial conditions and equipment out of service:

1. The plant was operating at 100% rated power (1520 Mwt) and had been operating at this level continuously for 145 days. The plant is currently in cold shutdown. Plant and equipment status are detailed on the attached Plant Status Sheet.

STATE OF NEW YORK
1987 INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

2. The reactor core is in cycle 16, near the end of life with a reactor coolant system (RCS) boron concentration of 20 ppm. The present boron concentration is now _____ ppm.
3. Reactor coolant system unidentified leak rate had been 1.25 gpm since 2130 the previous day.
4. The Turbine Driven Auxiliary Feedwater Pump was inoperable due to ongoing maintenance. It is now repaired and operable.
5. Containment Spray Pump 1A was inoperable due to seized pump bearings and has not yet been repaired.

An UNUSUAL EVENT was declared at () on October, _____ 1987 due to RCS leakage greater than Technical Specification limits (i.e., greater than 1 gpm unidentified leakage for more than 4 hours).

At approximately _____ hours, Ginna Station experienced a large earthquake tremor which triggered the plant accelerograph. Plant operators started both diesel generators and dispatched the accelerograph film for photographic processing. Following this, there was indication of a secondary leak inside of Containment. The leak was on the "A" S/G steam line exiting the S/G.

Approximately 25 minutes after the earthquake, a fire was detected in the Ginna Auxiliary Building in a safeguards bus transformer. The normal feed to the safeguards bus tripped, and the 1B emergency diesel generator tied into Bus No. 16. The plant fire brigade was activated and responded to the fire.

An ALERT was declared at _____ hrs due to the fire (i.e., fire potentially affecting safety systems as determined by the Shift Supervisor). The fire was declared out at _____ hrs.

At _____ hrs that morning the 1B emergency diesel generator tripped due to low bearing oil pressure, leaving safeguards Bus No. 16 and motor control center (MCC) 1D without a power source. Major safety-related equipment then became inoperable, including the following:

- 1) 1B Motor-driven Auxiliary Feedwater Pump
- 2) 1B and 1C Containment Recirculation Fans
- 3) 1B Containment Spray Pumps
- 4) 1B RHR Pump



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INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

- 5) 1B Safety Injection Pump
- 6) 1D Stand-by Auxiliary Feedwater Pump

A reactor shutdown was started due to Technical Specifications requiring shutdown without all 480 volt safeguards buses energized.

A SITE AREA EMERGENCY was declared at _____ hrs due to the fire causing a loss of safety systems including redundant components, (i.e., _____).

At _____ hrs, accelerograph film processing results indicate that an earthquake of 0.24g had occurred earlier.

NOTE: Additional information should be provided here as to the the offsite effects of the earthquake, e.g. Richter Scale estimates, approximate location of epicenter, damage to offsite structures and roadways.

The "A" S/G steam line severed inside Containment at approximately _____ hrs. Two control rods remained fully withdrawn. The core returned to power and a large amount of radioactivity from the fuel was released into the reactor coolant and into Containment. Containment spray did not initiate because both spray pumps were unavailable. Also, there was no 12% boric acid injection to the core because motor-operated valve MOV 826C was inoperable due to the safeguards Bus No. 16 outage.

A GENERAL EMERGENCY was declared at _____ hrs due to the loss of safety features, (i.e., inability to shut down the reactor which results in core damage and containment pressure increasing rapidly).

Immediate protective actions were recommended by the licensee. The following immediate protective actions were implemented by Wayne and Monroe Counties, and by New York State:

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Actions Taken

WAYNE COUNTY :

MONROE COUNTY :

NEW YORK STATE : (May also include recommendation to
shelter milk animals at SITE AREA)

Between _____ and _____ hours, Ginna operators were able to stabilize the plant using emergency operating procedures. However, because of the unavailability of containment spray and only 2 of the 4 containment fan coolers running, Containment pressure remained very high (_____ psig).

At _____ hrs. that morning, a severe earthquake aftershock caused the reactor control rod pressure housing that had been leaking to sever. Containment pressure and radiation levels began to increase again. At _____ hrs, a release from the plant to the environment began when the "B" Residual Heat Removal Pump suction line from Containment Sump "B" ruptured, presumably due the initial earthquake, the earthquake aftershock, and high Containment pressure. The release pathway was believed to be from the Containment, through the Sump "B" suction line to the "B" RHR Pump, into the Auxiliary Building Basement and out the Plant Vent.

The following protective actions were ultimately implemented by offsite governmental agencies:

Final Actions Taken

WAYNE COUNTY : ERPA's Sheltered:
ERPA's Evacuated:

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MONROE COUNTY : ERPA's Sheltered:
 ERPA's Evacuated:

NEW YORK STATE :

Offsite monitoring and in-plant sampling results indicated that the initial release was composed of noble gases, radioiodines and particulates. Ground deposition was detectable as indicated by radiological survey team readings.

The release was terminated at approximately _____ hrs due to repair of the 1B emergency diesel generator and restoration of power to the 480 volt Bus No. 16 and motor control center MCC-1D. This enabled the closing of MOV-851B, the isolation valve for the Sump "B" suction line to the "B" RHR Pump.

As of _____ hrs on DAY 1, the Ginna Plant was in the Recovery Phase of the steam line break (with core failure and terminated noble gas, radioiodine and particulate release to the environment).

Table _____ provides a summary of radiological data representative of the offsite survey instrument readings which would have been taken in various locations in the downwind area immediately following passage of the initial release plume on DAY 1.

Table _____ provides initial isotopic analysis results of soil, pasture grass and airborne radioiodine and particulate samples taken by offsite survey teams on DAY 1 and DAY 2.



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INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

7.2 NARRATIVE SUMMARY OF INGESTION PATHWAY EXERCISE SCENARIO

BEGINNING OF INGESTION PATHWAY EXERCISE:

NOTE: (This information to also be included in Initial Player Briefing)

It is now (actual clock time, approximately 0900 hours), and we are assuming we are in DAY 3. That means, that the radiological release from Ginna would have occurred the day before yesterday.

Additional data are now available from NYS offsite monitoring teams which conducted environmental survey measurements on DAY 2.



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1987 INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

All Exercise participants will now be allowed to review the information provided during the briefing and discuss among themselves the implications for further response actions. Any questions and clarifications should be directed to the lead Exercise controllers at each Emergency Response Facility. It is expected that Exercise play will begin at approximately 1000 hours.

At approximately 1300 hours (actual clock time) on DAY 3, the Exercise scenario will time ahead 3 days, thus placing all participants in DAY 6.

Additional data will be provided at this time, to reflect the collection and analysis of the following media:

TYPE:

LOCATION:

Open/Closed GM Readings
(3ft/Contact)

Selected Sample Points
(0 - 50 miles)

Micro-R Meter Readings

Selected Sample Points
(0 - 50 miles)

Soil Samples

Selected Sample Points
(0 - 50 miles)

Pasture Grass

Selected Sample Points
(0 - 50 miles)

Milk

Selected Sample Points
(0 - 50 miles)

Fresh Produce

Selected Sample Points
(0 - 50 miles)

TLD

Selected Fixed Locations
(0 - 20 miles)

Following any questions or clarifications, play will resume and further response actions will be discussed and acted upon with free play.

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1987 INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

At approximately 1500 hours (actual clock time), or at the discretion of the Lead Exercise Controller, exercise participants will be directed to conduct a qualitative discussion which addresses the types of data, general methodologies and resources available for the estimation of TOTAL POPULATION DOSE. Play will resume until approximately 1530 hours, or until the Lead Exercise Controller has determined that all Exercise objectives have been demonstrated. The Ingestion Pathway Exercise will then be terminated.



STATE OF NEW YORK
INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

7.3 INGESTION PATHWAY EXERCISE TIMELINE

<u>Appropriate Time</u>	<u>Scenario Time</u>	<u>Event Description</u>
<u>DAY 1</u>		
	11/00	The Ginna Plant is in the Recovery Phase of the steam line break (with core failure and terminated noble gas release to the environment). Reactor coolant system is being cooled down by steam venting from the "B" S/G and the severed control rod drive housing. Begin Player Briefing for Ingestion Pathway Exercise. Provide initial briefing and ground rules to players. Allow Exercise play to continue to allow initial decisions on offsite Ingestion Pathway survey team deployment to be made.
<u>DAY 2</u>		
0900		Begin conduct of evaluated NYS offsite survey team sampling field activities.
1500		Approximate time offsite sampling activities will terminate. One NYS Department of Transportation vehicle will transport environmental sampling to State Laboratory in Albany.
<u>DAY 3</u>		
0830		Begin Ingestion Pathway Player briefing.
1000		Begin Ingestion Pathway Exercise play.
1200		Break



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INGESTION PATHWAY EMERGENCY PREPAREDNESS EXERCISE

<u>Appropriate Time</u>	<u>Scenario Time</u>	<u>Event Description</u>
-----------------------------	--------------------------	--------------------------

DAY 3

1300		Resume Exercise play. Time warp to DAY 6.
------	--	---

DAY 6

Issue detailed Ingestion Pathway sampling and analysis data.

1500		Begin discussion on Total Population Dose.
------	--	--

1530		Terminate Ingestion Pathway Exercise.
------	--	---------------------------------------

TABLE 7.1

SUMMARY OF GINNA SITE METEOROLOGICAL CONDITIONS
(HOURLY AVERAGES)

<u>CLOCK TIME</u>	<u>WS-33FT</u> <u>(MPH)</u>	<u>WD-33 FT</u> <u>(DEG. FROM)</u>	<u>TEMP -</u> <u>33 FT</u>	<u>PASQUILL</u> <u>STABILITY</u>	<u>GENERAL</u> <u>WEATHER</u>
<u>DAY 1</u>					
0000-0100	3.2	330	65	F	OVERCAST
0100-0200	3.2	330	65	F	DRIZZLE
0200-0300	3.4	328	67	F	DRIZZLE
0300-0400	4.2	337	69	F	DRIZZLE
0400-0500	4.7	342	70	F	DRIZZLE
0500-0600	5.6	003	71	F	DRIZZLE
0600-0700	5.5	025	73	F	DRIZZLE
0700-0800	5.5	030	74	F	DRIZZLE
0800-0900	5.3	030	75	F	DRIZZLE
0900-1000	7.1	029	75	F	DRIZZLE
1000-1100	7.1	029	75	F	DRIZZLE
1100-1200	7.5	030	76	F	DRIZZLE
1200-1300	7.0	030	75	F	PT. CLOUDY
1300-1400	7.0	030	74	F	PT. CLOUDY
1400-2400	8.0	030	65	D	PT. CLOUDY

DAY 2

0000-2400

USE ACTUAL METEOROLOGY

DAY 3

0000-2400

USE ACTUAL METEOROLOGY



SECTION 8.0

MESSAGE FORMS AND PLANT DATA SHEETS.



Time: 1030

Message: 55

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: TSC Dose Assessment
Survey Center Manager
Plant Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison
NYS EOC Staff

Situated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill (DAY 1) will now begin.

FOR CONTROLLER USE ONLY.

Controller Notes:

1. Review emergency status up to present time. Summarize PAR's implemented.
2. Review upcoming schedule of events for DAY 2 and DAY 3.
3. Have players now discuss post-plume monitoring and assessment actions they would undertake for remainder of DAY 1 and DAY 2.

Actions Expected:

1. Ingestion Pathway survey/sampling team missions need to be clearly defined to provide sufficient directions to monitoring personnel for carrying out actions on DAY 2.



Time: 1300

Message: 56

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: TSC Dose Assessment
Survey Center Manager
Plant Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison
NYS EOC Staff

Stated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill. (DAY 1) will now terminate and resume tomorrow at 0900 hr.

FOR CONTROLLER USE ONLY

Controller Notes:

1. Ensure players have discussed post-plume monitoring and assessment actions they would undertake for remainder of DAY 1 and DAY 2.

Actions Expected:

1. Ingestion Pathway survey/sampling team missions have been clearly defined to provide sufficient directions to monitoring personnel for carrying out actions on DAY 2.



Time: 0900

Message: 57

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Ingestion Pathway Sampling Team Personnel
NYS Laboratory Personnel
NYS EOC Personnel

Simulated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill (DAY 2) will now begin.

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

1. Ingestion Pathway survey/sampling teams will now carry out missions designated on DAY 1.

Time: 1600

Message: 58

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Ingestion Pathway Sampling Team Personnel
NYS Laboratory Personnel
NYS EOC Personnel

Simulated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill (DAY 2) will now terminate and resume tomorrow at 0800 hrs.

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

1. Ingestion Pathway survey/sampling teams have completed missions and State Laboratory activities have been demonstrated .



Time: 0830

Message: 59

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Emergency Operations Center Staff
SEMO District Offices
Ginna Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison

Situated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill (DAY 3) will now begin.

FOR CONTROLLER USE ONLY

Controller Notes:

1. Review emergency status up to present time. Summarize PAR's implemented.
2. Provide laboratory analysis results and other field readings as a result of survey/sampling activities on DAY 1 and DAY 2.
3. Have players now review post-plume monitoring data and clarify information as appropriate.

Actions Expected:



Time: 1000

Message: 60

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Emergency Operations Center Staff --
SEMO District Offices
Ginna Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison

Stated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill (DAY 3) will now begin play if there are no further questions.

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

1. Discussion of sampling/survey data results, recommended protective actions, respective agency roles for implementation, interface with licensee and Federal response organizations.



Time: 1300

Message: 61

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Emergency Operations Center-Staff---
SEMO District Offices
Ginna Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison

Stated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill will now time warp to (DAY 6).

FOR CONTROLLER USE ONLY

Controller Notes:

1. Review emergency status up to present time. Summarize PAR's implemented.
2. Provide laboratory analysis results and other field readings as a result of survey/sampling activities up to present time.
3. Have players now review post-plume monitoring data and clarify information as appropriate.

Actions Expected:

1. Players will evaluate and discuss results of updated field information and recommend modifications to protective actions.

Time: 1430

Message: 62

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Emergency Operations Center Staff
SEMO District Offices
Ginna Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison

Stated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

A discussion of Total Population Dose assessment will now begin.

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

1. Players should discuss sources of data, assessment methods and other resources available for calculation of Total Population Dose.



Time: 1530

Message: 63

GINNA STATION

1987 PRACTICE DRILL

MESSAGE FORM

Message for: NYS Emergency Operations Center Staff
SEMO District Offices
Ginna Radiochemist
EOF Dose Assessment
EOF Recovery Manager
Nuclear Operations Manager
Offsite Agency Liaison
Corporate Spokesperson
Dose Assessment Liaison

S. Dated Plant Conditions: Per Controller

Message: ***THIS IS A DRILL***

The Ingestion Pathway Drill is now terminated and a brief critique will now follow.

FOR CONTROLLER USE ONLY

Controller Notes:

Actions Expected:

SECTION 9.0

IN-PLANT AND POST-ACCIDENT SAMPLE RADIOACTIVITY CONCENTRATIONS

SECTION 9.1

RADIOLOGICAL SUMMARY



9.1 Radiological Summary

A. Source Term

The radiological source term assumed for this scenario was selected to include sufficient radioiodine to achieve offsite deposition levels which exceed derived FDA Preventive and Emergency Protective Action Guides (PAG's) for soil, pasture grass and cow's milk. The Emergency PAG's for the milk pathway are exceeded out to approximately 12 miles downwind from the Ginna Plant. The Preventive PAG's for the milk pathway are exceeded out to approximately 30 miles downwind. Deposition radioactivity diminishes to background levels at or beyond 50 miles from the plant.

In addition, the postulated reactor accident is assumed to result in the release of particulates which also will ultimately enter various food and water pathways.

Immediate protective action recommendations (e.g., sheltering, evacuation) may not be necessarily based upon projected child thyroid dose, due to the pre-dominance of release noble gas quantities. (SEE FIGURE 9.1). The noble gas-to-radioiodine ratio assumed in this scenario is approximately 3300:1. An isotopic breakdown of assumed noble gas, radioiodine and particulate release quantities is provided in Table 9.1.

B. Integrated Offsite Doses Due to Plume Exposure

The downwind integrated doses from the 1.25-hour scenario release are as follows:

Whole Body Dose (at 5 miles) = 1.28 REM

Child Thyroid Dose (at 5 miles) = 0.48 REM

TABLE 9.1

The assumed release quantities for the Ginna Exercise Scenario are summarized as follows:

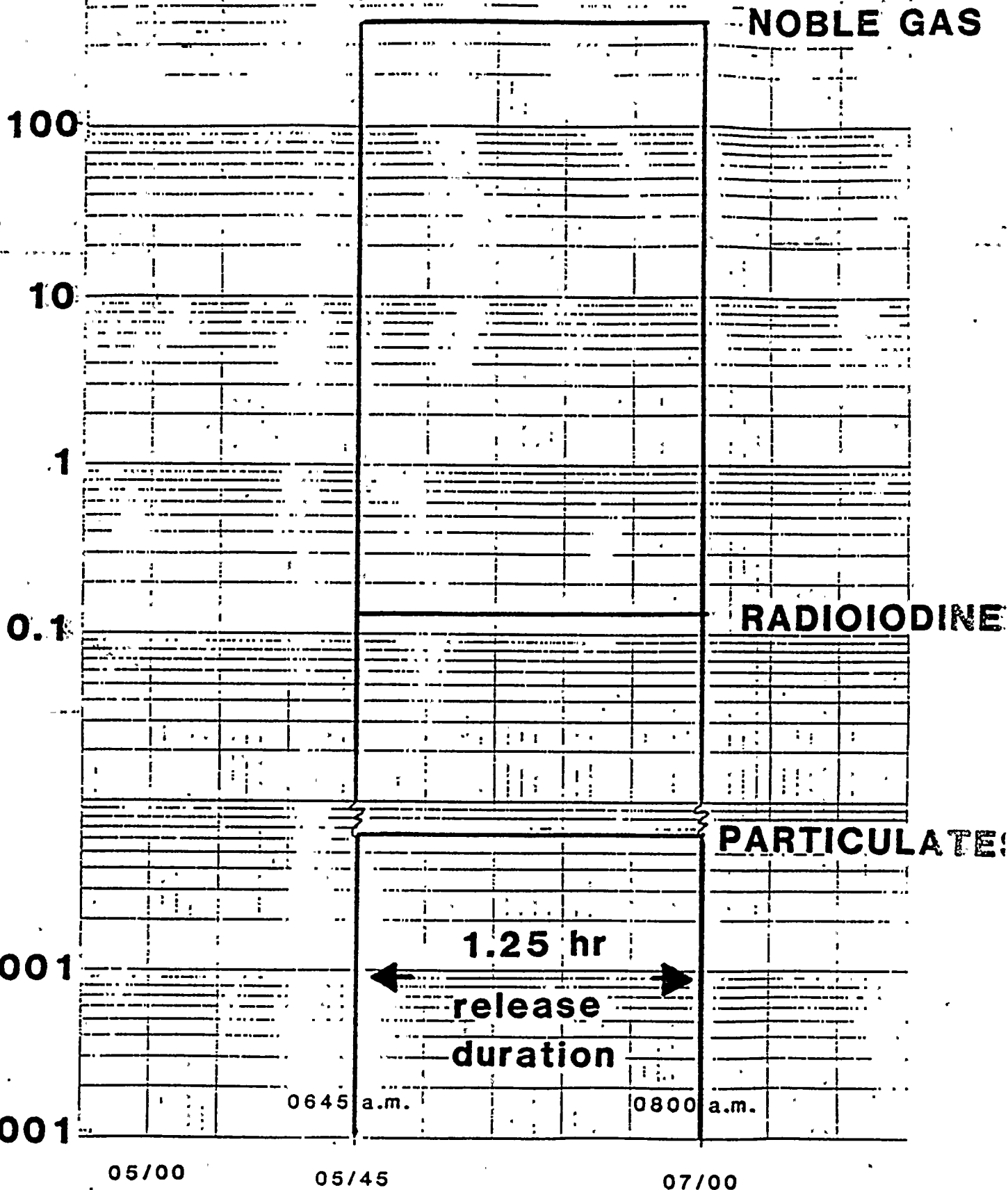
<u>NUCLIDE</u>	<u>CURIE/SEC</u>	<u>TOTAL CURIES RELEASED</u>
Kr-85	2.26 E-01	1.02 E+03
Kr-85m	2.40 E+01	1.08 E+05
Kr-87	4.00 E+01	1.80 E+05
Kr-88	6.00 E+01	2.70 E+05
Xe-131m	6.55 E-01	2.95 E+03
Xe-133	2.04 E+02	9.18 E+05
Xe-133m	3.20 E+01	1.44 E+05
Xe-135	4.00 E+01	1.80 E+05
Total Noble Gas	4.0 E+02	1.8 E+06
I-131	1.80 E-02	8.10 E+01
I-132	2.59 E-02	1.17 E+02
I-133	3.60 E-02	1.62 E+02
I-134	8.10 E-03	3.65 E+01
I-135	3.26 E-02	1.47 E+02
Total Iodines	1.2 E-01	5.4 E+02
Cs-134	4.32 E-05	1.94 E-01
Cs-137	1.98 E-05	8.91 E-02
Sr-89	4.68 E-08	2.11 E-04
Sr-90	4.32 E-08	1.94 E-04
Ba-140	1.01 E-06	4.54 E-03
La-140	1.01 E-06	4.54 E-03
Total Particulates	6.5 E-05	2.9 E-01



FIGURE 9.1

SCENARIO SOURCE TERM

CI/OEC



SCENARIO TIME

TABLE 9.2

PLANT VENT SAMPLE ANALYSIS

(T = 0645 - 0800)

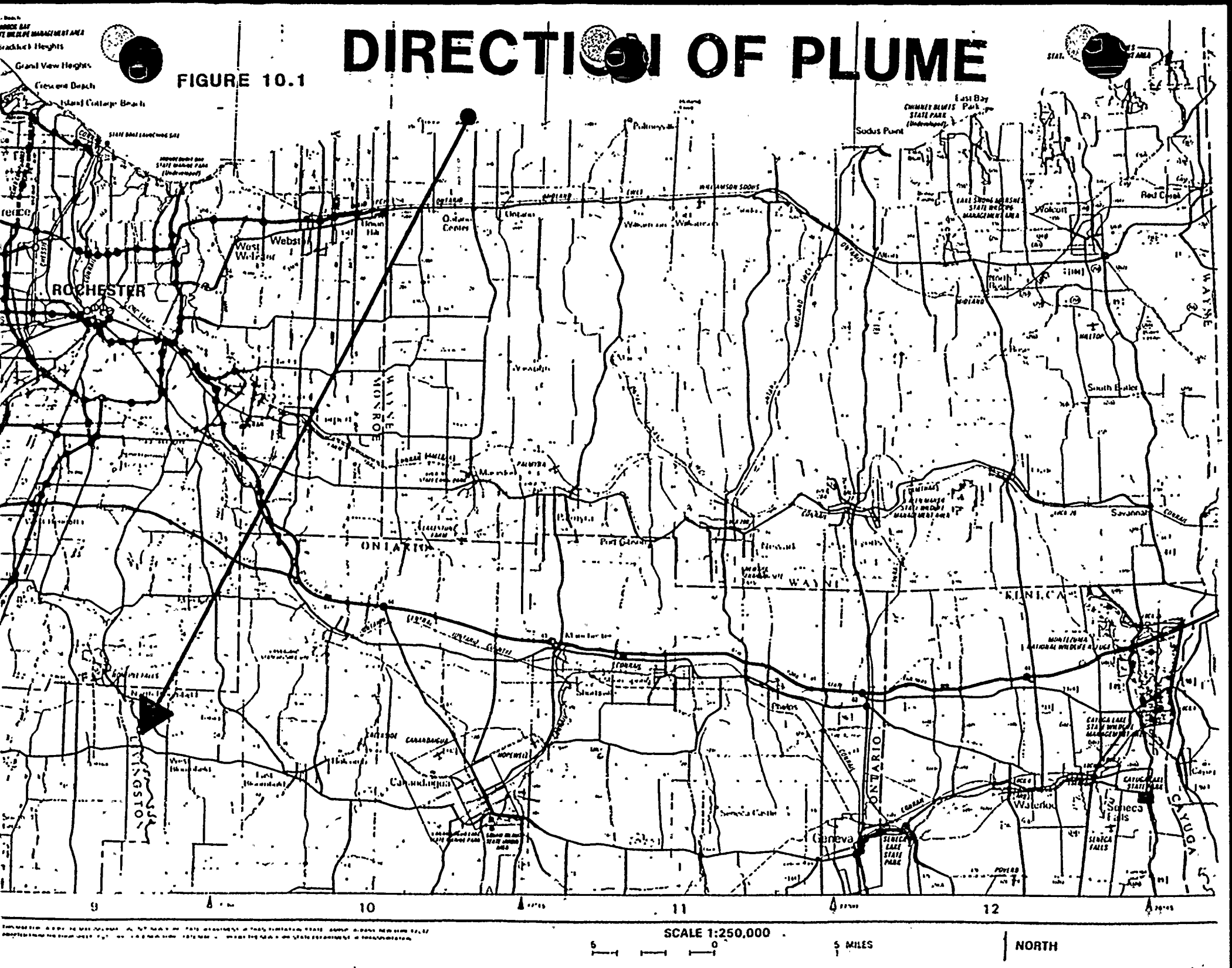
<u>NUCLIDE **</u>	<u>CONCENTRATION ** (UCI/CC)</u>
KR-85	6.22 E-03
KR-85M	6.20 E-01
KR-87	1.14 E+00
KR-88	1.66 E+00
XE-131M	1.80 E-02
XE-133	5.68 E+00
XE-133M	8.29 E-01
XE-135	1.09 E+00
XE-135M	5.00 E-04
 TOTAL NOBLE GAS	 1.10 E+01
 I-131	 5.03 E-04
I-132	7.23 E-04
I-133	1.01 E-03
I-134	2.26 E-04
I-135	9.11 E-04
 TOTAL RADIOIODINE	 3.37 E-03
 RB-88	 1.66 E+00
CS-134	1.21 E-06
CS-137	5.53 E-07
Ba-140	2.82 E-08
La-140	2.80 E-08
 TOTAL LONG LIVED PARTICULATE	 1.82 E-06

** Data to be provided to HP/Chemistry and Dose Assessment personnel in accordance with Exercise ground rules.



SECTION 10.0

METEOROLOGICAL AND OFFSITE RADIOLOGICAL DATA



SECTION 10.2

MAPS



PLUME MAP (0-1 MILE)

FIGURE 10.2

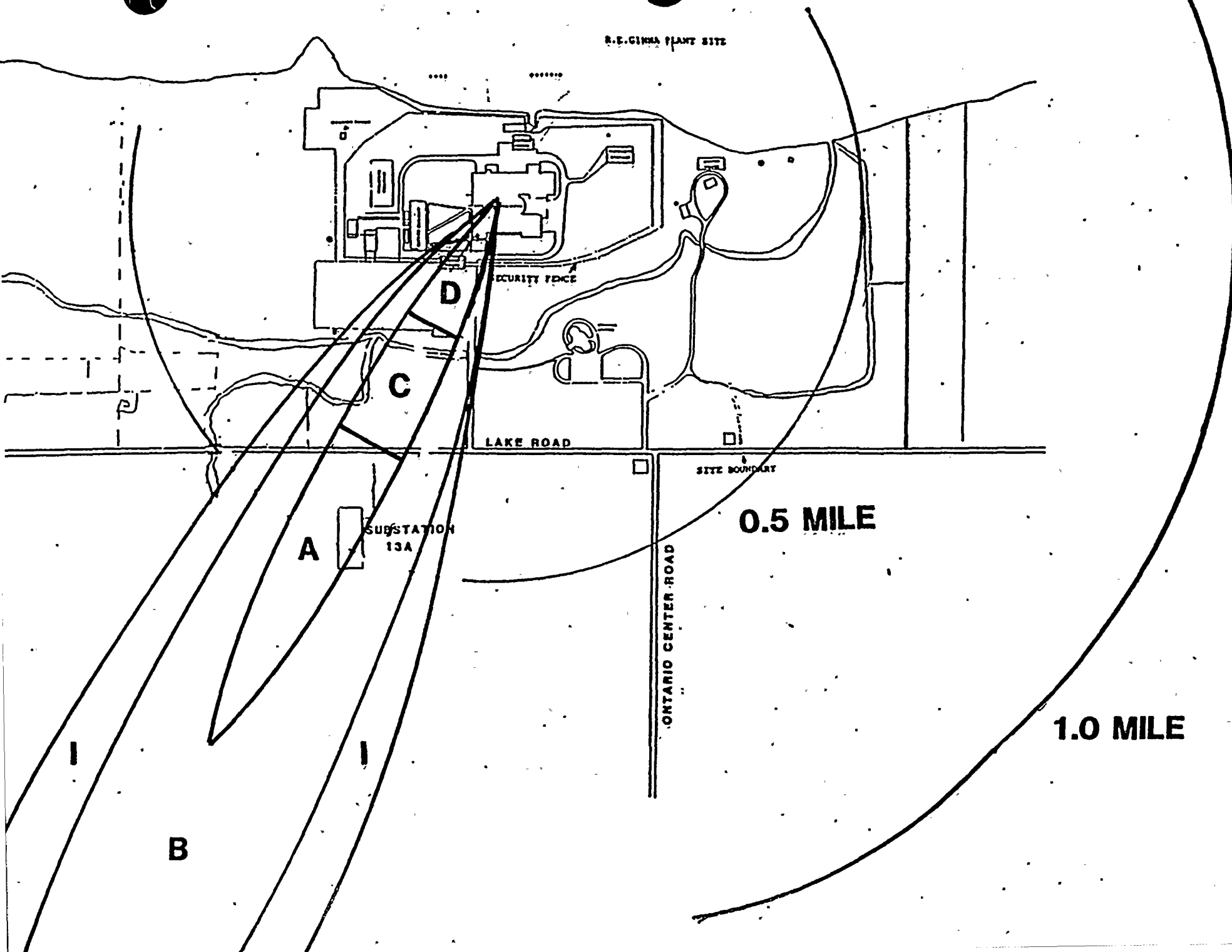




FIGURE 10.3

(REFER TO LARGE SIZE

0 - 10 MILE ZONE MAP)

SECTION 10.3

DEPOSITION DATA

NYS IP EXERCISE

GINNA RELEASE DEPOSITION PATTERN

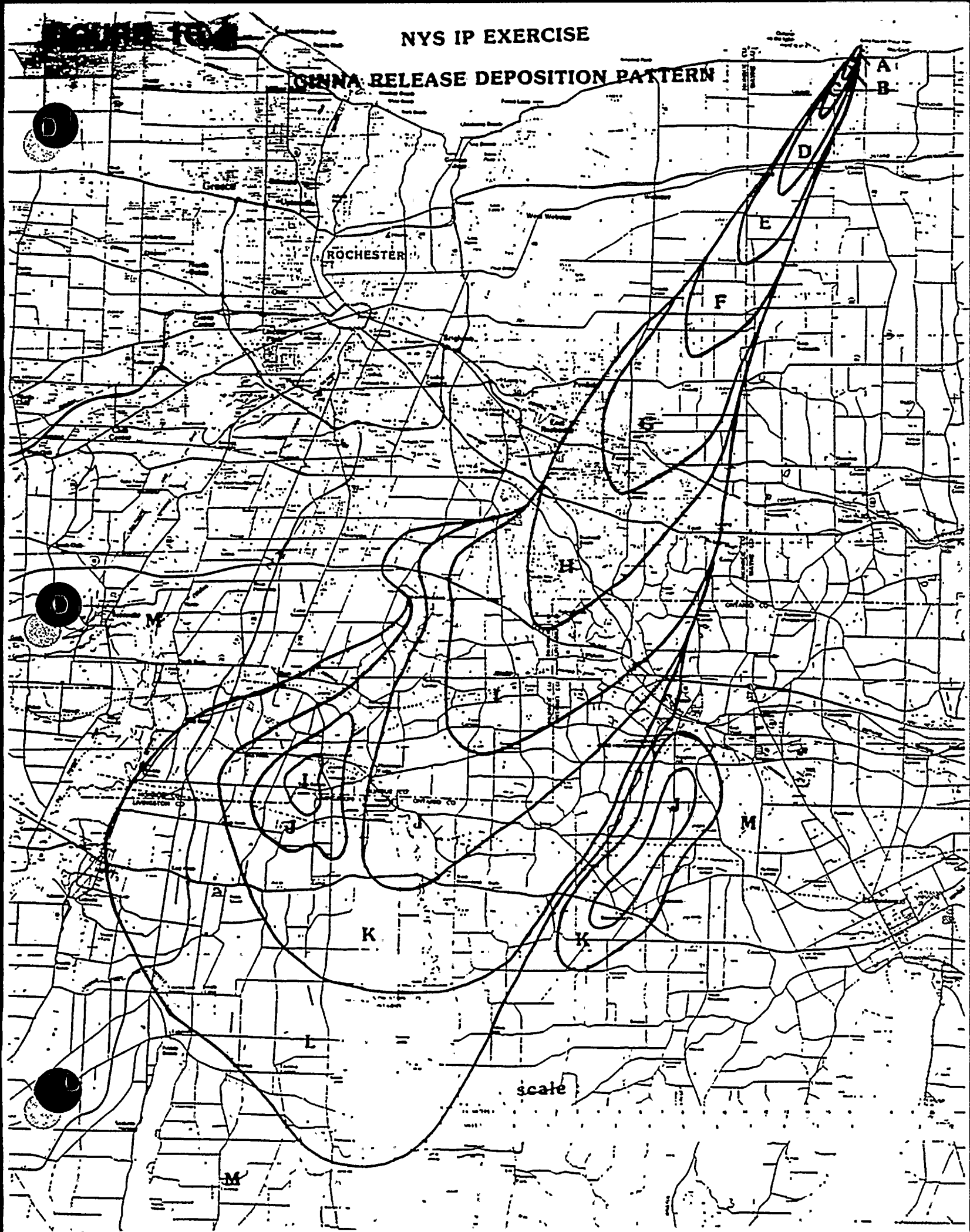


FIGURE 1

PRELIMINARY RESULTS FROM DOE ARMS FLY-OVER DAY 2

(IN UR/HR)

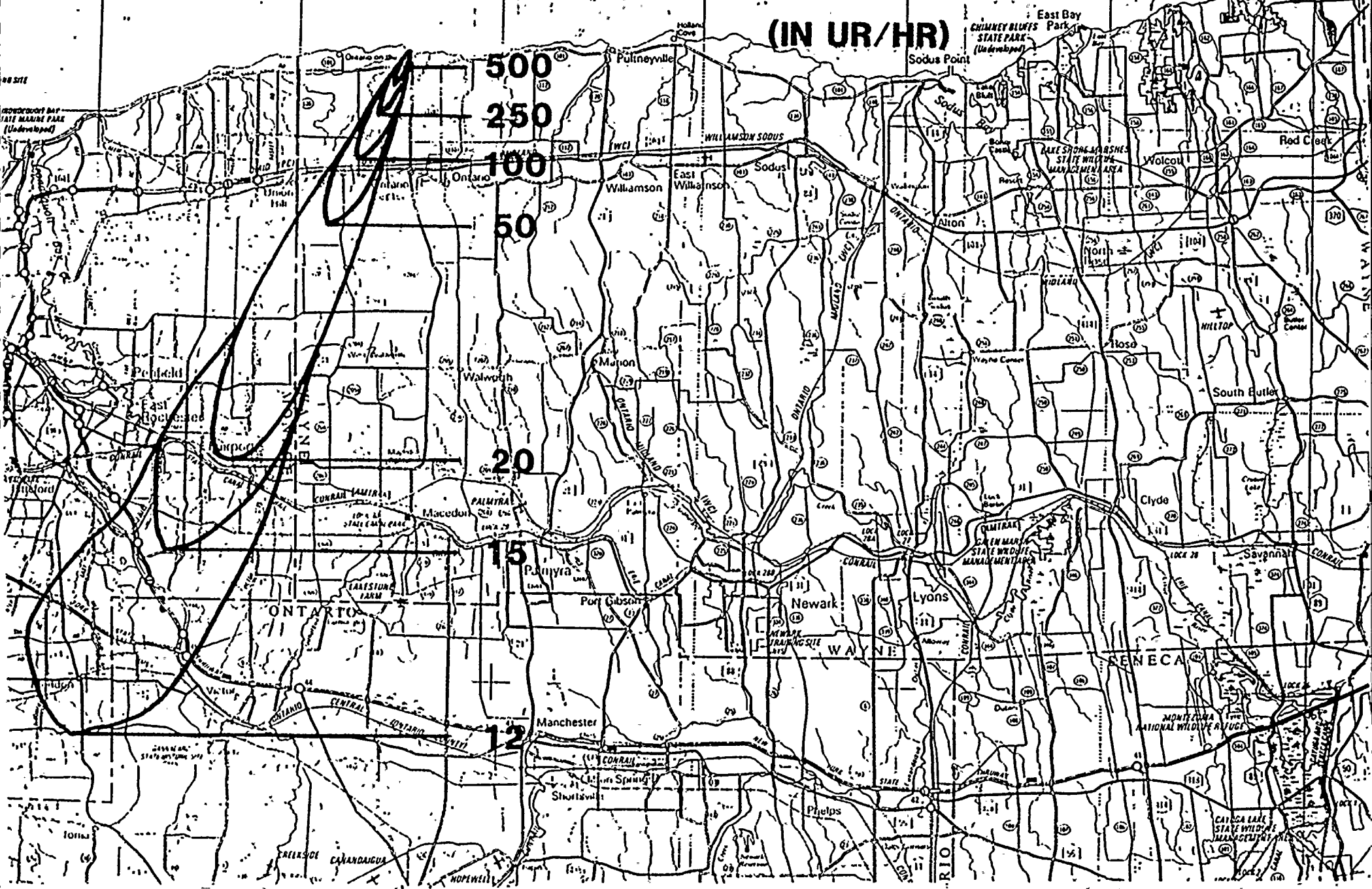




FIGURE 10.6

LATER RESULTS FROM DOE ARMS FLY-OVER DAY 2
(IN UR/HR)

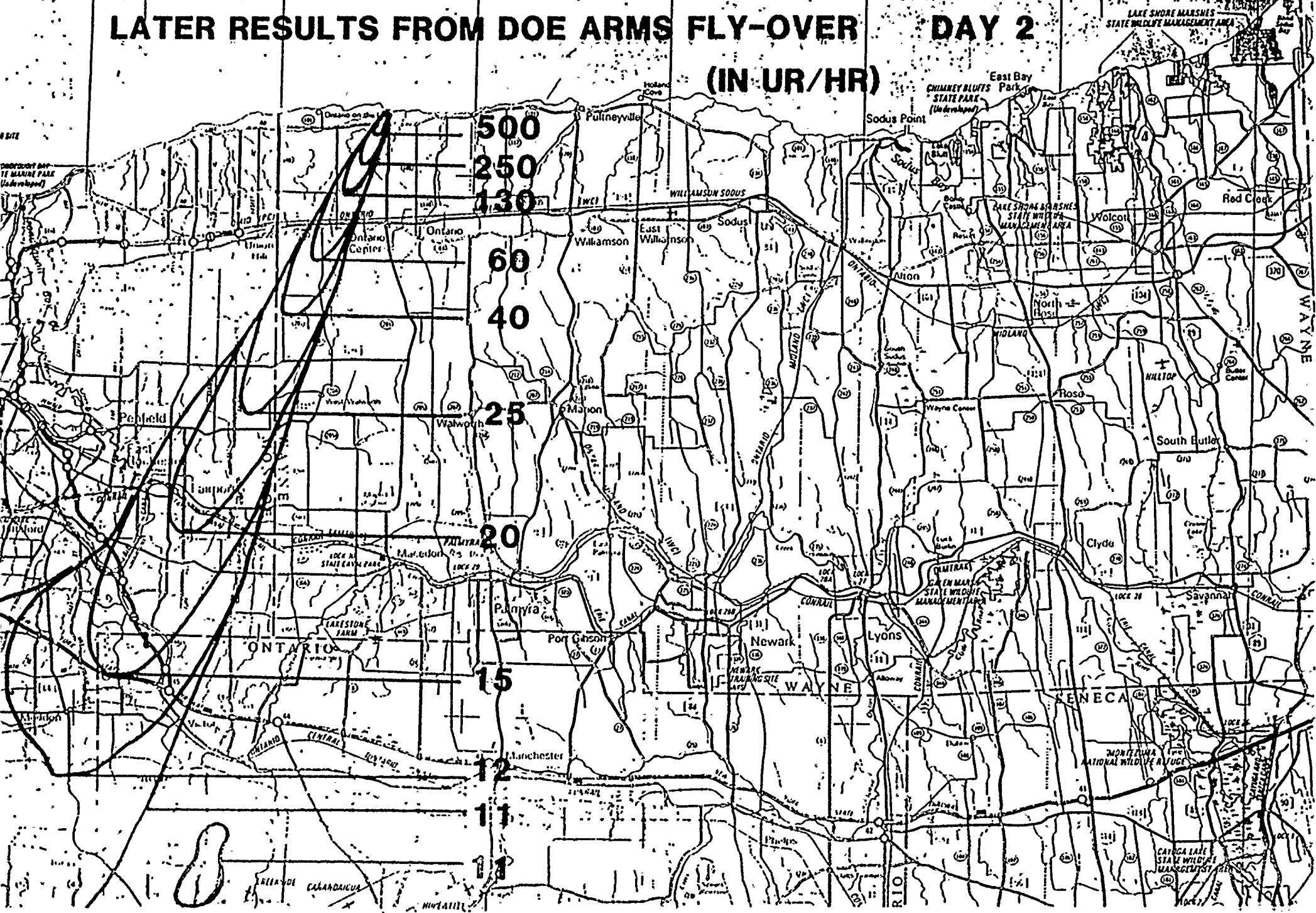




TABLE 10.0

INGESTION PATHWAY SAMPLE
COUNT/DOSE RATES @ 1CM ***

	<u>CONTAINER SIZE</u>	<u>(MICRO-R/HR)</u>	<u>(MR/HR)</u>	<u>(CPM) * END WINDOW PROBE</u>	<u>(CPM) ** PANCAKE GM PROBE</u>
<u>WATER</u> (PER uCi/cc)	1 LITER	1.0 E + 5	1.0 E + 2	2.2 E + 5	3.6 E + 5
	2 LITERS	1.5 E + 5	1.5 E + 2	3.3 E + 5	5.4 E + 5
	4 LITERS	2.0 E + 5	2.0 E + 2	2.0 E + 5	7.2 E + 5
<u>MILK</u> (PER uCi/l)	1 LITER	1.0 E + 2	1.0 E - 1	2.2 E + 2	3.6 E + 2
	2 LITERS	1.5 E + 2	1.5 E - 1	3.3 E + 2	5.4 E + 2
	4 LITERS	2.0 E + 2	2.0 E - 1	4.4 E + 2	7.2 E + 2
<u>VEGETA- TION</u> (PER uCi/kg)	1 LITER	1.0 E + 2	1.0 E - 1	2.2 E + 2	3.6 E + 2
	2 LITERS	1.5 E + 2	1.5 E - 1	3.3 E + 2	5.4 E + 2
	4 LITERS	2.0 E + 2	2.0 E - 1	4.4 E + 2	7.2 E + 2
<u>SOIL</u> (PER uCi/kg)	1 LITER	2.0 E + 2	2.0 E - 1	4.4 E + 2	7.2 E + 2
	2 LITERS	3.0 E + 2	3.0 E - 1	6.6 E + 2	1.0 E + 3
	4 LITERS	3.5 E + 2	3.5 E - 1	8.0 E + 2	1.3 E + 3

Notes:

- * = HP - 190 end-window probe w/ RM-14, or equivalent
 ** = HP - 210 or 260 pancake probe w/ RM-14, or equivalent
 *** = To compute sample count/dose rates, do the following:

1. Determine appropriate zone depending upon downwind location;
2. Determine total activity concentration (uCi/cc, uCi/liter or uCi/Kg) of environmental media of interest. Note that soil needs to be converted from uCi/m² to uCi/Kg depending on sampling depth, using factors listed at bottom of Table 10.3;
3. Multiply concentration by appropriate conversion factor above for the applicable container size.

GROUND SURVEYS (CPM)

DAY 1 AFTER PLUME PASSAGE

TABLE 10.1

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

0.0 HOURS

END WINDOW
PROBE (CPM)

PANCAKE
PROBE (CPM)

ZONE	TOTAL GROUND ACTIVITY UCI/M2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	2.19E+02	7.1E+03	5.0E+04	1.2E+04	5.0E+04
B	1.19E+02	3.9E+03	4.8E+04	6.3E+03	5.0E+04
C	5.95E+01	1.9E+03	2.4E+04	3.2E+03	5.0E+04
D	2.64E+01	8.7E+02	1.1E+04	1.4E+03	2.6E+04
E	1.67E+01	5.6E+02	6.7E+03	9.1E+02	1.7E+04
F	1.17E+01	4.0E+02	4.7E+03	6.5E+02	1.2E+04
G	7.64E+00	2.7E+02	3.1E+03	4.3E+02	7.6E+03
H	5.20E+00	1.9E+02	2.1E+03	3.0E+02	5.2E+03
I	4.50E+00	1.6E+02	1.8E+03	2.7E+02	4.5E+03
J	1.22E+00	5.9E+01	4.9E+02	9.4E+01	1.2E+03
K	2.61E-01	5.4E+01	1.0E+02	8.5E+01	2.6E+02
L	2.19E-01	4.8E+01	8.7E+01	7.6E+01	2.2E+02
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)
30 CPM (PANCAKE)

GROUND SURVEYS (CPM)

TABLE 10.1

DAY 2
(0500-1100 HR)

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL GROUND ACTIVITY IN 1/H2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	6.87E+01	1.1E+03	2.7E+04	1.8E+03	5.0E+04
B	3.73E+01	6.0E+02	1.5E+04	9.8E+02	3.7E+04
C	1.86E+01	3.1E+02	7.5E+03	5.0E+02	1.9E+04
D	8.27E+00	1.5E+02	3.3E+03	2.4E+02	8.3E+03
E	5.24E+00	1.0E+02	2.1E+03	1.6E+02	5.2E+03
F	3.66E+00	7.7E+01	1.5E+03	1.2E+02	3.7E+03
G	2.39E+00	5.7E+01	9.6E+02	9.1E+01	2.4E+03
H	1.63E+00	4.5E+01	6.5E+02	7.1E+01	1.6E+03
I	1.41E+00	2.0E+01	5.6E+02	3.0E+01	1.4E+03
J	3.82E-01	2.0E+01	1.5E+02	3.0E+01	3.8E+02
K	8.17E-02	2.0E+01	3.3E+01	3.0E+01	8.2E+01
L	6.84E-02	2.0E+01	2.7E+01	3.0E+01	6.8E+01
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)
30 CPM (PANCAKE)



GROUND SURVEYS (CPM)

TABLE 10.1

DAY 2
(1101-1700 HR)

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

30.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	5.99E+01	9.0E+02	2.4E+04	1.5E+03	5.0E+04
B	3.26E+01	5.0E+02	1.3E+04	8.1E+02	3.3E+04
C	1.63E+01	2.6E+02	6.5E+03	4.2E+02	1.6E+04
D	7.21E+00	1.3E+02	2.9E+03	2.0E+02	7.2E+03
E	4.57E+00	8.7E+01	1.8E+03	1.4E+02	4.6E+03
F	3.19E+00	6.7E+01	1.3E+03	1.1E+02	3.2E+03
G	2.09E+00	5.1E+01	8.3E+02	8.0E+01	2.1E+03
H	1.42E+00	2.0E+01	5.7E+02	3.0E+01	1.4E+03
I	1.23E+00	2.0E+01	4.9E+02	3.0E+01	1.2E+03
J	3.34E-01	2.0E+01	1.3E+02	3.0E+01	3.3E+02
K	7.13E-02	2.0E+01	2.9E+01	3.0E+01	7.1E+01
L	5.97E-02	2.0E+01	2.4E+01	3.0E+01	6.0E+01
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)
30 CPM (PANCAKE)

GROUND SURVEYS (CPM)

DAY 3

TABLE 10.1

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

48.0 HOURS

END WINDOW
PROBE (CPM)

PANCAKE
PROBE (CPM)

ZONE	TOTAL GROUND ACTIVITY UCI/M2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	4.41E+01	6.0E+02	1.8E+04	9.7E+02	4.4E+04
B	2.40E+01	3.3E+02	9.6E+03	5.4E+02	2.4E+04
C	1.20E+01	1.8E+02	4.8E+03	2.9E+02	1.2E+04
D	5.31E+00	8.9E+01	2.1E+03	1.4E+02	5.3E+03
E	3.36E+00	6.4E+01	1.3E+03	1.0E+02	3.4E+03
F	2.35E+00	5.1E+01	9.4E+02	8.0E+01	2.3E+03
G	1.54E+00	2.0E+01	6.1E+02	3.0E+01	1.5E+03
H	1.04E+00	2.0E+01	4.2E+02	3.0E+01	1.0E+03
I	9.03E-01	2.0E+01	3.6E+02	3.0E+01	9.0E+02
J	2.45E-01	2.0E+01	9.8E+01	3.0E+01	2.5E+02
K	5.24E-02	2.0E+01	2.1E+01	3.0E+01	5.2E+01
L	4.39E-02	2.0E+01	1.8E+01	3.0E+01	4.4E+01
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)

30 CPM (PANCAKE)

GROUND SURVEYS (CPM)

DAY 6

TABLE 10.1

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	2.44E+01	3.0E+02	9.8E+03	4.9E+02	2.4E+04
B	1.33E+01	1.7E+02	5.3E+03	2.8E+02	1.3E+04
C	6.62E+00	9.7E+01	2.6E+03	1.6E+02	6.6E+03
D	2.94E+00	5.4E+01	1.2E+03	8.6E+01	2.9E+03
E	1.86E+00	2.0E+01	7.4E+02	3.0E+01	1.9E+03
F	1.30E+00	2.0E+01	5.2E+02	3.0E+01	1.3E+03
G	8.50E-01	2.0E+01	3.4E+02	3.0E+01	8.5E+02
H	5.78E-01	2.0E+01	2.3E+02	3.0E+01	5.8E+02
I	5.00E-01	2.0E+01	2.0E+02	3.0E+01	5.0E+02
J	1.36E-01	2.0E+01	5.4E+01	3.0E+01	1.4E+02
K	2.90E-02	2.0E+01	1.2E+01	3.0E+01	2.9E+01
L	2.43E-02	2.0E+01	9.7E+00	3.0E+01	2.4E+01
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)

30 CPM (PANCAKE)

DAY 21

GROUND SURVEYS (CPM)

TABLE 10.1

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME =

480.0 HOURS

END WINDOW
PROBE (CPM)

PANCAKE
PROBE (CPM)

ZONE	TOTAL GROUND ACTIVITY UCI/M2	END WINDOW PROBE (CPM)		PANCAKE PROBE (CPM)	
		1 METER	1 CM	1 METER	1 CM
A	6.40E+00	1.1E+02	2.6E+03	1.7E+02	6.4E+03
B	3.48E+00	6.8E+01	1.4E+03	1.1E+02	3.5E+03
C	1.74E+00	4.4E+01	7.0E+02	6.9E+01	1.7E+03
D	7.71E-01	2.0E+01	3.1E+02	3.0E+01	7.7E+02
E	4.88E-01	2.0E+01	2.0E+02	3.0E+01	4.9E+02
F	3.41E-01	2.0E+01	1.4E+02	3.0E+01	3.4E+02
G	2.23E-01	2.0E+01	8.9E+01	3.0E+01	2.2E+02
H	1.52E-01	2.0E+01	6.1E+01	3.0E+01	1.5E+02
I	1.31E-01	2.0E+01	5.2E+01	3.0E+01	1.3E+02
J	3.57E-02	2.0E+01	1.4E+01	3.0E+01	3.6E+01
K	7.62E-03	2.0E+01	3.0E+00	3.0E+01	7.6E+00
L	6.38E-03	2.0E+01	2.6E+00	3.0E+01	6.4E+00
M	L.T. LLD	2.0E+01	2.0E+01	3.0E+01	3.0E+01

NOTE: ASSUMED BACKGROUND READING

20 CPM (END WINDOW)

30 CPM (PANCAKE)



MICRO-R/HR

DAY 1

TABLE 10.2

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL GROUND ACTIVITY DUE TO GROUND DEPOSITION	@1 METER MICRO-R/HOUR	@1 CM MICRO-R/HOUR
A	2.19E+02	3.2E+03	5.5E+03
B	1.19E+02	1.7E+03	3.0E+03
C	5.95E+01	8.7E+02	1.5E+03
D	2.64E+01	3.9E+02	6.6E+02
E	1.67E+01	2.4E+02	4.2E+02
F	1.17E+01	1.7E+02	2.9E+02
G	7.64E+00	1.1E+02	1.9E+02
H	5.20E+00	7.6E+01	1.3E+02
I	4.50E+00	6.6E+01	1.1E+02
J	1.22E+00	1.8E+01	3.0E+01
K	2.61E-01	1.5E+01	2.6E+01
L	2.19E-01	1.3E+01	2.2E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR

MICRO-R/HR

DAY 2
(0500-1100 HR)

TABLE 10.2

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	@1 METER	@1 CM
		MICRO-R/HOUR	MICRO-R/HOUR
A	6.87E+01	4.9E+02	8.2E+02
B	3.73E+01	2.6E+02	4.5E+02
C	1.86E+01	1.3E+02	2.2E+02
D	8.27E+00	5.8E+01	9.9E+01
E	5.24E+00	3.7E+01	6.3E+01
F	3.66E+00	2.6E+01	4.4E+01
G	2.39E+00	1.7E+01	2.9E+01
H	1.63E+00	1.1E+01	2.0E+01
I	1.41E+00	1.0E+01	1.0E+01
J	3.82E-01	1.0E+01	1.0E+01
K	8.17E-02	1.0E+01	1.0E+01
L	6.84E-02	1.0E+01	1.0E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR



MICRO-R/HR

DAY 2
(1101-1700 HR)

TABLE 10.2

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME =

30.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	@1 METER MICRO-R/HOUR	@1 CM MICRO-R/HOUR
A	5.99E+01	4.0E+02	6.8E+02
B	3.26E+01	2.2E+02	3.7E+02
C	1.63E+01	1.1E+02	1.8E+02
D	7.21E+00	4.8E+01	8.1E+01
E	4.57E+00	3.0E+01	5.2E+01
F	3.19E+00	2.1E+01	3.6E+01
G	2.09E+00	1.4E+01	2.4E+01
H	1.42E+00	1.0E+01	1.0E+01
I	1.23E+00	1.0E+01	1.0E+01
J	3.34E-01	1.0E+01	1.0E+01
K	7.13E-02	1.0E+01	1.0E+01
L	5.97E-02	1.0E+01	1.0E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR



MICRO-R/HR

DAY 3

TABLE 10.2

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	Q1 METER	Q1 CM
		MICRO-R/HOUR	MICRO-R/HOUR
A	4.41E+01	2.6E+02	4.5E+02
B	2.40E+01	1.4E+02	2.4E+02
C	1.20E+01	7.1E+01	1.2E+02
D	5.31E+00	3.2E+01	5.4E+01
E	3.36E+00	2.0E+01	3.4E+01
F	2.35E+00	1.4E+01	2.4E+01
G	1.54E+00	1.0E+01	1.0E+01
H	1.04E+00	1.0E+01	1.0E+01
I	9.03E-01	1.0E+01	1.0E+01
J	2.45E-01	1.0E+01	1.0E+01
K	5.24E-02	1.0E+01	1.0E+01
L	4.39E-02	1.0E+01	1.0E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR



MICRO-R/HR

DAY 6

TABLE 10.2

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	@1 METER	@1 CM
		MICRO-R/HOUR	MICRO-R/HOUR
A	2.44E+01	1.3E+02	2.2E+02
B	1.33E+01	7.0E+01	1.2E+02
C	6.62E+00	3.5E+01	5.9E+01
D	2.94E+00	1.5E+01	2.6E+01
E	1.86E+00	1.0E+01	1.0E+01
F	1.30E+00	1.0E+01	1.0E+01
G	8.50E-01	1.0E+01	1.0E+01
H	5.78E-01	1.0E+01	1.0E+01
I	5.00E-01	1.0E+01	1.0E+01
J	1.36E-01	1.0E+01	1.0E+01
K	2.90E-02	1.0E+01	1.0E+01
L	2.43E-02	1.0E+01	1.0E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR

MICRO-R/HR

DAY 21

TABLE 10.2

GAMMA MICRO-R/HR READINGS
DUE TO GROUND DEPOSITION

POST-PLUME DECAY TIME =

480.0 HOURS

Zona	Total Ground Activity in 1/M ²	@1 METER	@1 CM
		MICRO-R/HOUR	MICRO-R/HOUR
A	6.40E+00	4.0E+01	6.8E+01
B	3.48E+00	2.2E+01	3.7E+01
C	1.74E+00	1.1E+01	1.9E+01
D	7.71E-01	1.0E+01	1.0E+01
E	4.88E-01	1.0E+01	1.0E+01
F	3.41E-01	1.0E+01	1.0E+01
G	2.23E-01	1.0E+01	1.0E+01
H	1.52E-01	1.0E+01	1.0E+01
I	1.31E-01	1.0E+01	1.0E+01
J	3.57E-02	1.0E+01	1.0E+01
K	7.62E-03	1.0E+01	1.0E+01
L	6.38E-03	1.0E+01	1.0E+01
M	L.T. LLD	1.0E+01	1.0E+01

NOTE: ASSUMED BACKGROUND READING: 10 MICRO-R/HR

SOIL

DAY 1

TABLE 10.3

GROUND DEPOSITION ISOTOPIC ACTIVITY

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	I-131 UCI/M2	I-133 UCI/M2	CS-134 UCI/M2	CS-137 UCI/M2	BA-140 UCI/M2	LA-140 UCI/M2	SR-89 UCI/M2	SR-90 UCI/M2
A	2.20E+02	3.57E+01	7.00E+01	8.59E-03	3.94E-03	2.00E-04	1.98E-04	9.30E-06	8.59E-06
B	1.20E+02	1.94E+01	3.81E+01	4.67E-03	2.14E-03	1.09E-04	1.08E-04	5.05E-06	4.67E-06
C	6.03E+01	9.68E+00	1.90E+01	2.33E-03	1.07E-03	5.43E-05	5.38E-05	2.52E-06	2.33E-06
D	2.72E+01	4.30E+00	8.43E+00	1.03E-03	4.74E-04	2.41E-05	2.39E-05	1.12E-06	1.03E-06
E	1.75E+01	2.72E+00	5.34E+00	6.54E-04	3.00E-04	1.52E-05	1.51E-05	7.09E-07	6.54E-07
F	1.24E+01	1.90E+00	3.73E+00	4.57E-04	2.09E-04	1.06E-05	1.05E-05	4.95E-07	4.57E-07
G	8.39E+00	1.24E+00	2.44E+00	2.99E-04	1.37E-04	6.97E-06	6.90E-06	3.24E-07	2.99E-07
H	5.95E+00	8.46E-01	1.66E+00	2.03E-04	9.33E-05	4.74E-06	4.70E-06	2.20E-07	2.03E-07
I	5.25E+00	7.31E-01	1.44E+00	1.76E-04	8.06E-05	4.10E-06	4.06E-06	1.91E-07	1.76E-07
J	1.97E+00	1.99E-01	3.90E-01	4.78E-05	2.19E-05	1.11E-06	1.10E-06	5.18E-08	4.78E-08
K	1.01E+00	4.25E-02	8.33E-02	1.02E-05	4.68E-06	2.38E-07	2.36E-07	1.11E-08	1.02E-08
L	9.69E-01	3.56E-02	6.98E-02	8.55E-06	3.92E-06	1.99E-07	1.97E-07	9.26E-09	8.55E-09
M	7.50E-01	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE:

1. TO CONVERT TO UCI/KG, USE THE FOLLOWING FACTORS:

SOIL SAMPLE DEPTH	CONVERSION
1 CM	UCI/M2 /20
2.5 CM	UCI/M2 /50
5 CM	UCI/M2 /100

2. SOIL BACKGROUND ACTIVITY = 7.5E-01 UCI/M2 DUE TO K-40 (80%), RB-87 (10%), TH-232 (5%) AND U-238 (5%).



SOIL

DAY 2
(0500-1100 HR)

TABLE 10.3

GROUND DEPOSITION ISOTOPIC ACTIVITY

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	I-131 UCI/M2	I-133 UCI/M2	CS-134 UCI/M2	CS-137 UCI/M2	BA-140 UCI/M2	LA-140 UCI/M2	SR-89 UCI/M2	SR-90 UCI/M2
A	6.95E+01	3.28E+01	3.09E+01	8.58E-03	3.93E-03	1.90E-04	1.93E-04	9.17E-06	8.59E-06
B	3.81E+01	1.78E+01	1.68E+01	4.66E-03	2.14E-03	1.03E-04	1.05E-04	4.98E-06	4.67E-06
C	1.94E+01	8.89E+00	8.38E+00	2.33E-03	1.07E-03	5.14E-05	5.25E-05	2.49E-06	2.33E-06
D	9.02E+00	3.94E+00	3.72E+00	1.03E-03	4.74E-04	2.28E-05	2.33E-05	1.10E-06	1.03E-06
E	5.99E+00	2.50E+00	2.35E+00	6.54E-04	3.00E-04	1.44E-05	1.47E-05	6.99E-07	6.54E-07
F	4.41E+00	1.74E+00	1.64E+00	4.56E-04	2.09E-04	1.01E-05	1.03E-05	4.88E-07	4.57E-07
G	3.14E+00	1.14E+00	1.08E+00	2.99E-04	1.37E-04	6.60E-06	6.74E-06	3.19E-07	2.99E-07
H	2.38E+00	7.76E-01	7.32E-01	2.03E-04	9.33E-05	4.49E-06	4.58E-06	2.17E-07	2.03E-07
I	2.16E+00	6.71E-01	6.33E-01	1.76E-04	8.06E-05	3.88E-06	3.96E-06	1.88E-07	1.76E-07
J	1.13E+00	1.82E-01	1.72E-01	4.77E-05	2.19E-05	1.05E-06	1.08E-06	5.11E-08	4.78E-08
K	8.32E-01	3.90E-02	3.67E-02	1.02E-05	4.68E-06	2.25E-07	2.30E-07	1.09E-08	1.02E-08
L	8.18E-01	3.26E-02	3.08E-02	8.55E-06	3.92E-06	1.89E-07	1.93E-07	9.14E-09	8.55E-09
M	7.50E-01	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE:

1. TO CONVERT TO UCI/KG, USE THE FOLLOWING FACTORS:

SOIL SAMPLE DEPTH	CONVERSION
1 CM	UCI/M2 /20
2.5 CM	UCI/M2 /50
5 CM	UCI/M2 /100

2. SOIL BACKGROUND ACTIVITY = 7.5E-01 UCI/M2 DUE TO K-40 (80%), RB-87 (10%), TH-232 (5%) AND U-238 (5%).



SOIL

DAY 2
(1101-1700 HR)

TABLE 10.3

GROUND DEPOSITION ISOTOPIC ACTIVITY

POST-PLUME DECAY TIME =

30.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	I-131 UCI/M2	I-133 UCI/M2	CS-134 UCI/M2	CS-137 UCI/M2	BA-140 UCI/M2	LA-140 UCI/M2	SR-89 UCI/M2	SR-90 UCI/M2
A	6.07E+01	3.21E+01	2.52E+01	8.58E-03	3.93E-03	1.87E-04	1.91E-04	9.14E-06	8.59E-06
B	3.33E+01	1.74E+01	1.37E+01	4.66E-03	2.14E-03	1.02E-04	1.04E-04	4.97E-06	4.67E-06
C	1.70E+01	8.70E+00	6.82E+00	2.33E-03	1.07E-03	5.07E-05	5.18E-05	2.48E-06	2.33E-06
D	7.96E+00	3.86E+00	3.03E+00	1.03E-03	4.74E-04	2.25E-05	2.30E-05	1.10E-06	1.03E-06
E	5.32E+00	2.44E+00	1.92E+00	6.54E-04	3.00E-04	1.43E-05	1.46E-05	6.97E-07	6.54E-07
F	3.94E+00	1.71E+00	1.34E+00	4.56E-04	2.09E-04	9.95E-06	1.02E-05	4.86E-07	4.57E-07
G	2.84E+00	1.12E+00	8.76E-01	2.99E-04	1.37E-04	6.51E-06	6.65E-06	3.18E-07	2.99E-07
H	2.17E+00	7.60E-01	5.96E-01	2.03E-04	9.33E-05	4.43E-06	4.53E-06	2.17E-07	2.03E-07
I	1.98E+00	6.57E-01	5.15E-01	1.76E-04	8.06E-05	3.83E-06	3.91E-06	1.87E-07	1.76E-07
J	1.08E+00	1.78E-01	1.40E-01	4.77E-05	2.19E-05	1.04E-06	1.06E-06	5.09E-08	4.78E-08
K	8.21E-01	3.81E-02	2.99E-02	1.02E-05	4.68E-06	2.22E-07	2.27E-07	1.09E-08	1.02E-08
L	8.10E-01	3.19E-02	2.51E-02	8.54E-06	3.92E-06	1.86E-07	1.90E-07	9.11E-09	8.55E-09
M	7.50E-01	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE:

1. TO CONVERT TO UCI/KG, USE THE FOLLOWING FACTORS:

SOIL SAMPLE DEPTH	CONVERSION
1 CM	UCI/M2 /20
2.5 CM	UCI/M2 /50
5 CM	UCI/M2 /100

2. SOIL BACKGROUND ACTIVITY = 7.5E-01 UCI/M2 DUE TO K-40 (80%), RB-87 (10%), TH-232 (5%) AND U-238 (5%).

SOIL

TABLE 10.3

DAY 3

GROUND DEPOSITION ISOTOPIC ACTIVITY

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	I-131 UCI/M2	I-133 UCI/M2	CS-134 UCI/M2	CS-137 UCI/M2	BA-140 UCI/M2	LA-140 UCI/M2	SR-89 UCI/M2	SR-90 UCI/M2
A	4.48E+01	3.01E+01	1.36E+01	8.57E-03	3.93E-03	1.80E-04	1.82E-04	9.05E-06	8.58E-06
B	2.47E+01	1.63E+01	7.39E+00	4.66E-03	2.14E-03	9.75E-05	9.87E-05	4.92E-06	4.66E-06
C	1.27E+01	8.15E+00	3.69E+00	2.33E-03	1.07E-03	4.87E-05	4.93E-05	2.45E-06	2.33E-06
D	6.06E+00	3.62E+00	1.64E+00	1.03E-03	4.74E-04	2.16E-05	2.19E-05	1.09E-06	1.03E-06
E	4.11E+00	2.29E+00	1.04E+00	6.53E-04	3.00E-04	1.37E-05	1.38E-05	6.90E-07	6.54E-07
F	3.10E+00	1.60E+00	7.24E-01	4.56E-04	2.09E-04	9.55E-06	9.67E-06	4.81E-07	4.57E-07
G	2.29E+00	1.05E+00	4.74E-01	2.98E-04	1.37E-04	6.25E-06	6.33E-06	3.15E-07	2.99E-07
H	1.79E+00	7.12E-01	3.22E-01	2.03E-04	9.32E-05	4.25E-06	4.31E-06	2.14E-07	2.03E-07
I	1.65E+00	6.16E-01	2.79E-01	1.76E-04	8.06E-05	3.68E-06	3.72E-06	1.85E-07	1.76E-07
J	9.95E-01	1.67E-01	7.57E-02	4.77E-05	2.19E-05	9.99E-07	1.01E-06	5.04E-08	4.78E-08
K	8.02E-01	3.57E-02	1.62E-02	1.02E-05	4.68E-06	2.13E-07	2.16E-07	1.08E-08	1.02E-08
L	7.94E-01	2.99E-02	1.36E-02	8.54E-06	3.92E-06	1.79E-07	1.81E-07	9.01E-09	8.55E-09
M	7.50E-01	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE:

1. TO CONVERT TO UCI/KG, USE THE FOLLOWING FACTORS:

SOIL SAMPLE DEPTH	CONVERSION
1 CM	UCI/M2 /20
2.5 CM	UCI/M2 /50
5 CM	UCI/M2 /100

2. SOIL BACKGROUND ACTIVITY = 7.5E-01 UCI/M2 DUE TO K-40 (80%), RB-87 (10%), TH-232 (5%) AND U-238 (5%).

SOIL

DAY 6

TABLE 10.3

GROUND DEPOSITION ISOTOPIC ACTIVITY

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	I-131	I-133	CS-134	CS-137	BA-140	LA-140	SR-89	SR-90
		UCI/M2	UCI/M2	UCI/M2	UCI/M2	UCI/M2	UCI/M2	UCI/M2	UCI/M2
A	1.11E+01	2.32E+01	1.16E+00	8.55E-03	3.93E-03	1.53E-04	1.37E-04	8.68E-06	8.58E-06
B	1.40E+01	1.26E+01	6.33E-01	4.64E-03	2.14E-03	8.29E-05	7.43E-05	4.72E-06	4.66E-06
C	1.17E+00	6.30E+00	3.16E-01	2.32E-03	1.07E-03	4.14E-05	3.71E-05	2.36E-06	2.33E-06
D	1.69E+00	2.80E+00	1.40E-01	1.03E-03	4.74E-04	1.84E-05	1.65E-05	1.04E-06	1.03E-06
E	2.61E+00	1.77E+00	8.88E-02	6.51E-04	3.00E-04	1.16E-05	1.04E-05	6.62E-07	6.54E-07
F	2.05E+00	1.24E+00	6.20E-02	4.55E-04	2.09E-04	8.12E-06	7.28E-06	4.62E-07	4.57E-07
G	1.60E+00	8.09E-01	4.06E-02	2.98E-04	1.37E-04	5.31E-06	4.76E-06	3.02E-07	2.99E-07
H	1.33E+00	5.50E-01	2.76E-02	2.03E-04	9.32E-05	3.62E-06	3.24E-06	2.06E-07	2.03E-07
I	1.25E+00	4.76E-01	2.39E-02	1.75E-04	8.06E-05	3.13E-06	2.80E-06	1.78E-07	1.76E-07
J	8.86E-01	1.29E-01	6.48E-03	4.76E-05	2.19E-05	8.49E-07	7.61E-07	4.83E-08	4.78E-08
K	7.79E-01	2.76E-02	1.39E-03	1.02E-05	4.68E-06	1.81E-07	1.63E-07	1.03E-08	1.02E-08
L	7.74E-01	2.31E-02	1.16E-03	8.51E-06	3.92E-06	1.52E-07	1.36E-07	8.65E-09	8.55E-09
M	7.50E-01	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE:

1. TO CONVERT TO UCI/KG, USE THE FOLLOWING FACTORS:

SOIL SAMPLE DEPTH	CONVERSION
1 CM	UCI/M2 /20
2.5 CM	UCI/M2 /50
5 CM	UCI/M2 /100

2. SOIL BACKGROUND ACTIVITY = 7.5E-01 UCI/M2 DUE TO K-40 (80%), RB-87 (10%), TH-232 (5%) AND U-238 (5%).



SOIL

TABLE 10.3

DAY 21

GROUND DEPOSITION ISOTOPIC ACTIVITY

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL GROUND ACTIVITY UCI/M2	I-131 UCI/M2	I-133 UCI/M2	CS-134 UCI/M2	CS-137 UCI/M2	BA-140 UCI/M2	LA-140 UCI/M2	SR-89 UCI/M2	SR-90 UCI/M2
A	7.15E+00	6.39E+00	5.36E-06	8.43E-03	3.93E-03	6.77E-05	2.64E-05	7.06E-06	8.57E-06
B	4.23E+00	3.47E+00	2.91E-06	4.58E-03	2.14E-03	3.68E-05	1.43E-05	3.84E-06	4.66E-06
C	2.49E+00	1.73E+00	1.45E-06	2.29E-03	1.07E-03	1.84E-05	7.16E-06	1.92E-06	2.33E-06
D	1.52E+00	7.69E-01	6.45E-07	1.01E-03	4.73E-04	8.15E-06	3.18E-06	8.50E-07	1.03E-06
E	1.24E+00	4.87E-01	4.08E-07	6.43E-04	3.00E-04	5.16E-06	2.01E-06	5.38E-07	6.54E-07
F	1.09E+00	3.40E-01	2.85E-07	4.49E-04	2.09E-04	3.60E-06	1.40E-06	3.76E-07	4.56E-07
G	9.73E-01	2.23E-01	1.87E-07	2.94E-04	1.37E-04	2.36E-06	9.19E-07	2.46E-07	2.99E-07
H	9.02E-01	1.51E-01	1.27E-07	2.00E-04	9.31E-05	1.60E-06	6.25E-07	1.67E-07	2.03E-07
I	8.81E-01	1.31E-01	1.10E-07	1.73E-04	8.05E-05	1.39E-06	5.41E-07	1.45E-07	1.76E-07
J	7.86E-01	3.56E-02	2.98E-08	4.69E-05	2.19E-05	3.77E-07	1.47E-07	3.93E-08	4.77E-08
K	7.58E-01	7.60E-03	6.37E-09	1.00E-05	4.67E-06	8.05E-08	3.14E-08	8.40E-09	1.02E-08
L	7.56E-01	6.37E-03	5.34E-09	8.40E-06	3.92E-06	6.74E-08	2.63E-08	7.04E-09	8.54E-09
M	7.50E-01	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE:

1. TO CONVERT TO UCI/KG, USE THE FOLLOWING FACTORS:

SOIL SAMPLE DEPTH	CONVERSION
1 CM	UCI/M2 /20
2.5 CM	UCI/M2 /50
5 CM	UCI/M2 /100

2. SOIL BACKGROUND ACTIVITY = 7.5E-01 UCI/M2 DUE TO K-40 (80%), RB-87 (10%), TH-232 (5%) AND U-238 (5%).



AIR SAMPLE ISOTOPIC RESULTS

TABLE 10.4-a

AIR PARTICULATE FILTER
ISOTOPIC ACTIVITY

(COLLECTION DURING RELEASE)

ZONE	TOTAL ACTIVITY UCI/CC	FIELD READING (CPM)	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC
A	1.27E-06	16,068	1.87E-07	3.78E-07	1.81E-09	8.31E-10	4.23E-11	4.23E-11
B	6.16E-07	7,822	9.18E-08	1.84E-07	8.81E-10	4.04E-10	2.06E-11	2.06E-11
C	2.97E-07	3,778	4.42E-08	8.84E-08	4.24E-10	1.95E-10	9.90E-12	9.90E-12
D	1.25E-07	1,606	1.87E-08	3.73E-08	1.79E-10	8.21E-11	4.18E-12	4.18E-12
E	7.63E-08	986	1.14E-08	2.27E-08	1.09E-10	5.00E-11	2.55E-12	2.55E-12
F	4.97E-08	649	7.40E-09	1.48E-08	7.11E-11	3.26E-11	1.66E-12	1.66E-12
G	2.32E-08	314	3.46E-09	6.92E-09	3.32E-11	1.52E-11	7.75E-13	7.75E-13
H	4.74E-09	80	7.06E-10	1.41E-09	6.78E-12	3.11E-12	1.58E-13	1.58E-13
I	2.73E-09	55	4.07E-10	8.14E-10	3.91E-12	1.79E-12	9.12E-14	9.12E-14
J	1.13E-09	34	1.68E-10	3.35E-10	1.61E-12	7.38E-13	3.75E-14	3.75E-14
K	3.85E-10	25	5.73E-11	1.15E-10	5.50E-13	2.52E-13	1.28E-14	1.28E-14
L	8.06E-11	21	1.20E-11	2.40E-11	1.15E-13	5.28E-14	2.69E-15	2.69E-15
M	L.T. LLD	20	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.4-b

SILVER ZEOLITE CARTRIDGE
RADIOIODINE ISOTOPIC ACTIVITY

ZONE	TOTAL ACTIVITY UCI/CC	FIELD READING (CPM)	I-131 UCI/CC	I-132 UCI/CC	I-133 UCI/CC	I-134 UCI/CC	I-135 UCI/CC
A	3.80E-06	13,672	5.66E-07	8.16E-07	1.13E-06	2.55E-07	1.03E-06
B	1.85E-06	6,657	2.75E-07	3.97E-07	5.51E-07	1.24E-07	4.98E-07
C	8.89E-07	3,217	1.33E-07	1.91E-07	2.65E-07	5.97E-08	2.40E-07
D	3.75E-07	1,369	5.60E-08	8.06E-08	1.12E-07	2.52E-08	1.01E-07
E	2.28E-07	842	3.41E-08	4.91E-08	6.82E-08	1.53E-08	6.17E-08
F	1.49E-07	555	2.22E-08	3.20E-08	4.44E-08	9.99E-09	4.02E-08
G	6.96E-08	270	1.04E-08	1.50E-08	2.08E-08	4.67E-09	1.88E-08
H	1.42E-08	71	2.12E-09	3.05E-09	4.24E-09	9.54E-10	3.84E-09
I	8.19E-09	49	1.22E-09	1.76E-09	2.44E-09	5.50E-10	2.21E-09
J	3.37E-09	32	5.03E-10	7.24E-10	1.01E-09	2.26E-10	9.10E-10
K	1.15E-09	24	1.72E-10	2.48E-10	3.44E-10	7.74E-11	3.11E-10
L	2.41E-10	21	3.60E-11	5.18E-11	7.20E-11	1.62E-11	6.52E-11
M	L.T. LLD	20	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD



PASTURE

PASTURE GRASS, LARGE, LATE HARVEST HAY

DAY

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	4.07E+01	1.37E+01	2.69E+01	3.43E-03	1.71E-03	7.69E-05	7.69E-05	3.44E-06	3.07E-06
B	2.21E+01	7.46E+00	1.46E+01	1.87E-03	9.30E-04	4.18E-05	4.18E-05	1.87E-06	1.67E-06
C	1.10E+01	3.72E+00	7.31E+00	9.32E-04	4.64E-04	2.09E-05	2.09E-05	9.34E-07	8.32E-07
D	4.90E+00	1.65E+00	3.24E+00	4.13E-04	2.06E-04	9.26E-06	9.26E-06	4.15E-07	3.69E-07
E	3.10E+00	1.05E+00	2.05E+00	2.62E-04	1.30E-04	5.87E-06	5.87E-06	2.63E-07	2.34E-07
F	2.16E+00	7.30E-01	1.43E+00	1.83E-04	9.10E-05	4.09E-06	4.09E-06	1.83E-07	1.63E-07
G	1.42E+00	4.78E-01	9.38E-01	1.20E-04	5.96E-05	2.68E-06	2.68E-06	1.20E-07	1.07E-07
H	9.64E-01	3.25E-01	6.38E-01	8.14E-05	4.05E-05	1.82E-06	1.82E-06	8.16E-08	7.27E-08
I	8.33E-01	2.81E-01	5.52E-01	7.04E-05	3.51E-05	1.58E-06	1.58E-06	7.06E-08	6.28E-08
J	2.26E-01	7.64E-02	1.50E-01	1.91E-05	9.52E-06	4.28E-07	4.28E-07	1.92E-08	1.71E-08
K	4.84E-02	1.63E-02	3.20E-02	4.08E-06	2.03E-06	9.15E-08	9.15E-08	4.10E-09	3.65E-09
L	4.05E-02	1.37E-02	2.68E-02	1.57E-06	1.70E-06	7.67E-08	7.67E-08	3.43E-09	3.05E-09
M	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.6-A

COW'S MILK

COW'S MILK

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
B	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
C	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
D	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
E	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
F	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
G	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
H	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
I	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
J	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
K	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
L	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: IF MILK AT A PROCESSING PLANT IS SAMPLED, USE 1 % OF ABOVE MILK CONCENTRATIONS
OR CHOOSE ZONE MOST CLOSELY APPROXIMATING SOURCE OF MILK IF KNOWN.



PASTURE

TABLE

PASTURE GRASS, SILAGE, LATE HARVEST HAY

DAY 2
(0500-1100 HR)

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	2.33E+01	1.20E+01	1.13E+01	3.26E-03	1.63E-03	6.93E-05	6.78E-05	3.23E-08	2.92E-06
B	1.26E+01	6.51E+00	6.13E+00	1.77E-03	8.84E-04	3.77E-05	3.69E-05	1.76E-08	1.58E-06
C	6.31E+00	3.25E+00	3.06E+00	8.85E-04	4.41E-04	1.88E-05	1.84E-05	8.76E-07	7.91E-07
D	2.80E+00	1.44E+00	1.36E+00	3.93E-04	1.96E-04	8.34E-06	8.16E-06	3.89E-07	3.51E-07
E	1.77E+00	9.13E-01	8.61E-01	2.49E-04	1.24E-04	5.28E-06	5.17E-06	2.46E-07	2.22E-07
F	1.24E+00	6.37E-01	6.01E-01	1.74E-04	8.66E-05	3.69E-06	3.61E-06	1.72E-07	1.55E-07
G	8.11E-01	4.17E-01	3.93E-01	1.14E-04	5.67E-05	2.41E-06	2.36E-06	1.12E-07	1.02E-07
H	5.52E-01	2.84E-01	2.68E-01	7.73E-05	3.86E-05	1.64E-06	1.61E-06	7.65E-08	6.91E-08
I	4.77E-01	2.45E-01	2.31E-01	6.69E-05	3.33E-05	1.42E-06	1.39E-06	6.62E-08	5.97E-08
J	1.30E-01	6.67E-02	6.28E-02	1.82E-05	9.06E-06	3.86E-07	3.78E-07	1.80E-08	1.62E-08
K	2.77E-02	1.42E-02	1.34E-02	3.88E-06	1.93E-06	8.24E-08	8.07E-08	3.84E-09	3.47E-09
L	2.32E-02	1.19E-02	1.12E-02	1.49E-06	1.62E-06	6.90E-08	6.76E-08	3.22E-09	2.90E-09
M	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.6-A

COW'S MILK

COW'S MILK

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	5.60E+00	2.18E+00	3.42E+00	2.46E-04	1.21E-04	5.20E-07	5.09E-07	4.53E-08	4.37E-08
B	3.04E+00	1.18E+00	1.86E+00	1.34E-04	6.55E-05	2.82E-07	2.76E-07	2.46E-08	2.38E-08
C	1.52E+00	5.91E-01	9.28E-01	6.68E-05	3.27E-05	1.41E-07	1.38E-07	1.23E-08	1.19E-08
D	6.74E-01	2.62E-01	4.12E-01	2.96E-05	1.45E-05	6.26E-08	6.12E-08	5.45E-09	5.26E-09
E	4.27E-01	1.66E-01	2.61E-01	1.88E-05	9.19E-06	3.96E-08	3.88E-08	3.45E-09	3.33E-09
F	2.98E-01	1.16E-01	1.82E-01	1.31E-05	6.41E-06	2.77E-08	2.71E-08	2.41E-09	2.33E-09
G	1.95E-01	7.59E-02	1.19E-01	6.58E-06	4.20E-06	1.81E-08	1.77E-08	1.58E-09	1.52E-09
H	1.33E-01	5.16E-02	8.11E-02	5.84E-06	2.86E-06	1.23E-08	1.21E-08	1.07E-09	1.04E-09
I	1.15E-01	4.46E-02	7.01E-02	5.05E-06	2.47E-06	1.07E-08	1.04E-08	9.28E-10	8.96E-10
J	3.12E-02	1.21E-02	1.90E-02	1.37E-06	6.71E-07	2.89E-09	2.83E-09	2.52E-10	2.43E-10
K	6.66E-03	2.59E-03	4.07E-03	2.93E-07	1.43E-07	6.18E-10	6.05E-10	5.38E-11	5.20E-11
L	5.58E-03	2.17E-03	3.41E-03	1.13E-07	1.20E-07	5.18E-10	5.07E-10	4.51E-11	4.36E-11
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: IF MILK AT A PROCESSING PLANT IS SAMPLED, USE 1 % OF ABOVE MILK CONCENTRATIONS OR CHOOSE ZONE MOST CLOSELY APPROXIMATING SOURCE OF MILK IF KNOWN.



PASTURE

PASTURE GRASS, SILAGE, LATE HARVEST HAY

DAY
(1101-1700 HR)

POST-PLUME DECAY TIME =

30.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	2.07E+01	1.16E+01	9.08E+00	3.22E-03	1.61E-03	6.75E-05	6.57E-05	3.18E-06	2.88E-06
B	1.12E+01	6.29E+00	4.94E+00	1.75E-03	8.73E-04	3.67E-05	3.57E-05	1.73E-06	1.56E-06
C	5.61E+00	3.14E+00	2.46E+00	8.74E-04	4.36E-04	1.83E-05	1.78E-05	8.62E-07	7.81E-07
D	2.49E+00	1.39E+00	1.09E+00	3.88E-04	1.93E-04	8.13E-06	7.91E-06	3.83E-07	3.47E-07
E	1.58E+00	8.82E-01	6.92E-01	2.46E-04	1.22E-04	5.15E-06	5.01E-06	2.42E-07	2.19E-07
F	1.10E+00	6.16E-01	4.83E-01	1.71E-04	8.55E-05	3.59E-06	3.50E-06	1.69E-07	1.53E-07
G	7.20E-01	4.03E-01	3.16E-01	1.12E-04	5.60E-05	2.35E-06	2.29E-06	1.11E-07	1.00E-07
H	4.90E-01	2.74E-01	2.15E-01	7.63E-05	3.81E-05	1.60E-06	1.56E-06	7.53E-08	6.82E-08
I	4.23E-01	2.37E-01	1.86E-01	6.60E-05	3.29E-05	1.38E-06	1.35E-06	6.51E-08	5.90E-08
J	1.15E-01	6.44E-02	5.06E-02	1.79E-05	8.94E-06	3.76E-07	3.66E-07	1.77E-08	1.60E-08
K	2.46E-02	1.38E-02	1.08E-02	3.83E-06	1.91E-06	8.03E-08	7.82E-08	3.78E-09	3.42E-09
L	2.06E-02	1.15E-02	9.05E-03	1.47E-06	1.60E-06	6.73E-08	6.55E-08	3.17E-09	2.87E-09
M	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.6-A

COW'S MILK

COW'S MILK

POST-PLUME DECAY TIME =

30.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	6.26E+00	3.51E+00	2.75E+00	3.04E-04	1.49E-04	1.69E-06	1.64E-06	5.94E-08	5.76E-08
B	3.40E+00	1.91E+00	1.50E+00	1.65E-04	8.08E-05	9.17E-07	8.93E-07	3.23E-08	3.13E-08
C	1.70E+00	9.52E-01	7.47E-01	8.24E-05	4.04E-05	4.58E-07	4.46E-07	1.61E-08	1.56E-08
D	7.54E-01	4.22E-01	3.31E-01	3.66E-05	1.79E-05	2.03E-07	1.98E-07	7.15E-09	6.93E-09
E	4.77E-01	2.67E-01	2.10E-01	2.32E-05	1.13E-05	1.29E-07	1.25E-07	4.53E-09	4.39E-09
F	3.33E-01	1.87E-01	1.46E-01	1.62E-05	7.91E-06	8.98E-08	8.74E-08	3.16E-09	3.06E-09
G	2.18E-01	1.22E-01	9.59E-02	1.06E-05	5.18E-06	5.88E-08	5.72E-08	2.07E-09	2.01E-09
H	1.48E-01	8.31E-02	6.52E-02	7.20E-06	3.52E-06	4.00E-08	3.89E-08	1.41E-09	1.36E-09
I	1.28E-01	7.19E-02	5.64E-02	6.23E-06	3.05E-06	3.46E-08	3.37E-08	1.22E-09	1.18E-09
J	3.49E-02	1.95E-02	1.53E-02	1.69E-06	8.28E-07	9.40E-09	9.15E-09	3.31E-10	3.21E-10
K	7.45E-03	4.17E-03	3.27E-03	3.61E-07	1.77E-07	2.01E-09	1.95E-09	7.07E-11	6.85E-11
L	6.24E-03	3.49E-03	2.74E-03	1.39E-07	1.48E-07	1.68E-09	1.64E-09	5.92E-11	5.74E-11
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: IF MILK AT A PROCESSING PLANT IS SAMPLED, USE 1 % OF ABOVE MILK CONCENTRATIONS OR CHOOSE ZONE MOST CLOSELY APPROXIMATING SOURCE OF MILK IF KNOWN.



PASTURE GRASS, SILAGE, LATE HARVEST HAY

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	1.52E+01	1.05E+01	4.73E+00	3.10E-03	1.55E-03	6.24E-05	5.98E-05	3.03E-06	2.77E-06
B	8.25E+00	5.68E+00	2.57E+00	1.68E-03	8.40E-04	3.39E-05	3.25E-05	1.65E-06	1.51E-06
C	4.12E+00	2.84E+00	1.28E+00	8.41E-04	4.20E-04	1.69E-05	1.62E-05	8.22E-07	7.52E-07
D	1.83E+00	1.26E+00	5.70E-01	3.73E-04	1.86E-04	7.51E-06	7.20E-06	3.65E-07	3.34E-07
E	1.16E+00	7.97E-01	3.61E-01	2.36E-04	1.18E-04	4.76E-06	4.56E-06	2.31E-07	2.11E-07
F	8.08E-01	5.56E-01	2.52E-01	1.65E-04	8.23E-05	3.32E-06	3.18E-06	1.61E-07	1.47E-07
G	5.29E-01	3.64E-01	1.65E-01	1.08E-04	5.39E-05	2.17E-06	2.08E-06	1.06E-07	9.66E-08
H	3.60E-01	2.48E-01	1.12E-01	7.34E-05	3.67E-05	1.48E-06	1.42E-06	7.18E-08	6.57E-08
I	3.11E-01	2.14E-01	9.69E-02	6.35E-05	3.17E-05	1.28E-06	1.22E-06	6.21E-08	5.68E-08
J	8.45E-02	5.82E-02	2.63E-02	1.73E-05	8.61E-06	3.47E-07	3.33E-07	1.69E-08	1.54E-08
K	1.81E-02	1.24E-02	5.63E-03	3.69E-06	1.84E-06	7.42E-08	7.11E-08	3.60E-09	3.30E-09
L	1.51E-02	1.04E-02	4.71E-03	1.42E-06	1.54E-06	6.22E-08	5.96E-08	3.02E-09	2.76E-09
M	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.6-A

COW'S MILK

COW'S MILK

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	4.60E+00	3.17E+00	1.43E+00	5.85E-04	2.86E-04	1.56E-06	1.49E-06	1.42E-07	1.39E-07
B	2.50E+00	1.72E+00	7.79E-01	3.18E-04	1.56E-04	8.48E-07	8.12E-07	7.69E-08	7.53E-08
C	1.25E+00	8.59E-01	3.89E-01	1.59E-04	7.77E-05	4.23E-07	4.06E-07	3.84E-08	3.76E-08
D	5.54E-01	3.81E-01	1.73E-01	7.04E-05	3.45E-05	1.88E-07	1.80E-07	1.70E-08	1.67E-08
E	3.51E-01	2.41E-01	1.09E-01	4.46E-05	2.18E-05	1.19E-07	1.14E-07	1.08E-08	1.06E-08
F	2.45E-01	1.69E-01	7.63E-02	3.11E-05	1.52E-05	8.30E-08	7.95E-08	7.53E-09	7.37E-09
G	1.60E-01	1.10E-01	4.99E-02	2.04E-05	9.98E-06	5.44E-08	5.21E-08	4.93E-09	4.83E-09
H	1.09E-01	7.51E-02	3.40E-02	1.39E-05	6.79E-06	3.70E-08	3.54E-08	3.35E-09	3.28E-09
I	9.43E-02	6.49E-02	2.94E-02	1.20E-05	5.87E-06	3.20E-08	3.06E-08	2.90E-09	2.84E-09
J	2.56E-02	1.76E-02	7.98E-03	3.26E-06	1.59E-06	8.69E-09	8.32E-09	7.88E-10	7.72E-10
K	5.47E-03	3.77E-03	1.71E-03	6.95E-07	3.41E-07	1.86E-09	1.78E-09	1.68E-10	1.65E-10
L	4.58E-03	3.16E-03	1.43E-03	2.67E-07	2.85E-07	1.55E-09	1.49E-09	1.41E-10	1.38E-10
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: IF MILK AT A PROCESSING PLANT IS SAMPLED, USE 1 % OF ABOVE MILK CONCENTRATIONS
OR CHOOSE ZONE MOST CLOSELY APPROXIMATING SOURCE OF MILK IF KNOWN.

PASTURE

TABLE 10.6

PASTURE GRASS, SILAGE, LATE HARVEST HAY

DAY 6

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	7.29E+00	8.94E+00	3.48E-01	2.66E-03	1.33E-03	4.56E-05	4.09E-05	2.50E-06	2.38E-06
B	3.96E+00	3.77E+00	1.89E-01	1.44E-03	7.22E-04	2.48E-05	2.22E-05	1.36E-06	1.29E-06
C	1.98E+00	1.88E+00	9.45E-02	7.21E-04	3.61E-04	1.24E-05	1.11E-05	6.78E-07	6.46E-07
D	8.78E-01	8.36E-01	4.19E-02	3.20E-04	1.60E-04	5.49E-06	4.93E-06	3.01E-07	2.87E-07
E	5.56E-01	5.29E-01	2.65E-02	2.03E-04	1.01E-04	3.48E-06	3.12E-06	1.90E-07	1.82E-07
F	3.88E-01	3.69E-01	1.85E-02	1.41E-04	7.07E-05	2.43E-06	2.18E-06	1.33E-07	1.27E-07
G	2.54E-01	2.42E-01	1.21E-02	9.25E-05	4.63E-05	1.59E-06	1.43E-06	8.70E-08	8.30E-08
H	1.73E-01	1.64E-01	8.25E-03	6.30E-05	3.15E-05	1.08E-06	9.70E-07	5.92E-08	5.65E-08
I	1.49E-01	1.42E-01	7.14E-03	5.44E-05	2.72E-05	9.35E-07	8.39E-07	5.12E-08	4.88E-08
J	4.06E-02	3.86E-02	1.94E-03	1.48E-05	7.40E-06	2.54E-07	2.28E-07	1.39E-08	1.33E-08
K	8.67E-03	8.26E-03	4.14E-04	3.16E-06	1.58E-06	5.42E-08	4.87E-08	2.97E-09	2.83E-09
L	7.26E-03	6.92E-03	3.47E-04	1.22E-06	1.32E-06	4.54E-08	4.08E-08	2.49E-09	2.37E-09
M	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.6-A

COW'S MILK

COW'S MILK

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	2.21E+00	2.10E+00	1.06E-01	5.01E-04	2.46E-04	1.14E-06	1.02E-06	1.17E-07	1.19E-07
B	1.20E+00	1.14E+00	5.73E-02	2.72E-04	1.34E-04	6.20E-07	5.56E-07	6.35E-08	6.47E-08
C	6.00E-01	5.71E-01	2.86E-02	1.36E-04	6.68E-05	3.09E-07	2.78E-07	3.17E-08	3.23E-08
D	2.66E-01	2.53E-01	1.27E-02	6.03E-05	2.96E-05	1.37E-07	1.23E-07	1.41E-08	1.43E-08
E	1.68E-01	1.60E-01	8.04E-03	3.82E-05	1.88E-05	8.69E-08	7.80E-08	8.90E-09	9.08E-09
F	1.18E-01	1.12E-01	5.61E-03	2.67E-05	1.31E-05	6.07E-08	5.45E-08	6.21E-09	6.34E-09
G	7.70E-02	7.33E-02	3.68E-03	1.75E-05	8.57E-06	3.97E-08	3.57E-08	4.07E-09	4.15E-09
H	5.24E-02	4.98E-02	2.50E-03	1.19E-05	5.83E-06	2.70E-08	2.43E-08	2.77E-09	2.82E-09
I	4.53E-02	4.31E-02	2.16E-03	1.03E-05	5.04E-06	2.34E-08	2.10E-08	2.39E-09	2.44E-09
J	1.23E-02	1.17E-02	5.87E-04	2.79E-06	1.37E-06	6.35E-09	5.70E-09	6.50E-10	6.63E-10
K	2.63E-03	2.50E-03	1.25E-04	5.96E-07	2.93E-07	1.36E-09	1.22E-09	1.39E-10	1.42E-10
L	2.20E-03	2.10E-03	1.05E-04	2.30E-07	2.45E-07	1.14E-09	1.02E-09	1.16E-10	1.19E-10
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: IF MILK AT A PROCESSING PLANT IS SAMPLED, USE 1 % OF ABOVE MILK CONCENTRATIONS OR CHOOSE ZONE MOST CLOSELY APPROXIMATING SOURCE OF MILK IF KNOWN.



PASTURE

TABLE

PASTURE GRASS, SILAGE, LATE HARVEST HAY

DAY 21

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	8.99E-01	8.97E-01	7.52E-07	1.23E-03	6.24E-04	9.50E-08	6.17E-06	9.55E-07	1.12E-06
B	4.89E-01	4.88E-01	4.09E-07	6.69E-04	3.39E-04	5.16E-08	3.35E-06	5.19E-07	6.07E-07
C	2.44E-01	2.43E-01	2.04E-07	3.34E-04	1.69E-04	2.58E-08	1.67E-06	2.59E-07	3.03E-07
D	1.08E-01	1.08E-01	9.05E-08	1.48E-04	7.51E-05	1.14E-08	7.43E-07	1.15E-07	1.35E-07
E	6.85E-02	6.84E-02	5.73E-08	9.38E-05	4.75E-05	7.24E-07	4.70E-07	7.28E-08	8.52E-08
F	4.78E-02	4.77E-02	4.00E-08	6.55E-05	3.32E-05	5.06E-07	3.28E-07	5.08E-08	5.95E-08
G	3.13E-02	3.13E-02	2.82E-08	4.29E-05	2.17E-05	3.31E-07	2.15E-07	3.33E-08	3.89E-08
H	2.13E-02	2.13E-02	1.78E-08	2.92E-05	1.48E-05	2.25E-07	1.46E-07	2.26E-08	2.65E-08
I	1.84E-02	1.84E-02	1.54E-08	2.52E-05	1.28E-05	1.95E-07	1.26E-07	1.96E-08	2.29E-08
J	5.00E-03	4.99E-03	4.19E-09	6.85E-06	3.47E-06	5.29E-08	3.43E-08	5.31E-09	6.22E-09
K	1.07E-03	1.07E-03	8.94E-10	1.46E-06	7.42E-07	1.13E-08	7.34E-09	1.14E-09	1.33E-09
L	8.95E-04	8.94E-04	7.49E-10	5.72E-07	6.21E-07	9.47E-09	6.15E-09	9.51E-10	1.11E-09
M	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.6-A

COW'S MILK

COW'S MILK

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	2.72E-01	2.72E-01	2.28E-07	2.32E-04	1.15E-04	2.38E-07	1.54E-07	4.46E-08	5.59E-08
B	1.48E-01	1.48E-01	1.24E-07	1.26E-04	6.28E-05	1.29E-07	8.38E-08	2.42E-08	3.04E-08
C	7.39E-02	7.38E-02	6.18E-08	6.30E-05	3.13E-05	6.44E-08	4.18E-08	1.21E-08	1.52E-08
D	3.28E-02	3.27E-02	2.74E-08	2.79E-05	1.39E-05	2.86E-08	1.86E-08	5.37E-09	6.73E-09
E	2.08E-02	2.07E-02	1.74E-08	1.77E-05	8.80E-08	1.81E-08	1.18E-08	3.40E-09	4.26E-09
F	1.45E-02	1.45E-02	1.21E-08	1.24E-05	6.14E-06	1.26E-08	6.21E-09	2.37E-09	2.97E-09
G	9.48E-03	9.47E-03	7.94E-09	8.09E-06	4.02E-08	8.27E-09	5.37E-09	1.55E-09	1.95E-09
H	6.45E-03	6.44E-03	5.40E-09	5.50E-08	2.74E-06	5.63E-09	3.65E-09	1.06E-09	1.32E-09
I	5.58E-03	5.57E-03	4.67E-09	4.76E-06	2.37E-06	4.87E-09	3.16E-09	9.14E-10	1.15E-09
J	1.52E-03	1.51E-03	1.27E-09	1.29E-06	6.43E-07	1.32E-09	8.58E-10	2.48E-10	3.11E-10
K	3.24E-04	3.23E-04	2.71E-10	2.76E-07	1.37E-07	2.82E-10	1.83E-10	5.31E-11	6.65E-11
L	2.71E-04	2.71E-04	2.27E-10	1.08E-07	1.15E-07	2.37E-10	1.54E-10	4.44E-11	5.57E-11
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: IF MILK AT A PROCESSING PLANT IS SAMPLED, USE 1 % OF ABOVE MILK CONCENTRATIONS OR CHOOSE ZONE MOST CLOSELY APPROXIMATING SOURCE OF MILK IF KNOWN.



GOAT'S MILK

DAY 1

TABLE 10.6-B

GOAT'S MILK

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
B	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
C	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
D	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
E	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
F	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
G	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
H	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
I	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
J	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
K	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
L	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: TOTAL MILK BACKGROUND ACTIVITY = 1.2 E-3 UCI/LITER
DUE TO K-40



GOAT'S MILK

TABLE 10.6-B

DAY 2
(0500-1100 HR)

GOAT'S MILK

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	6.72E+00	2.61E+00	4.11E+00	7.39E-04	3.62E-04	1.09E-06	1.07E-06	9.51E-08	9.18E-08
B	3.65E+00	1.42E+00	2.23E+00	4.01E-04	1.96E-04	5.93E-07	5.80E-07	5.17E-08	4.99E-08
C	1.82E+00	7.09E-01	1.11E+00	2.00E-04	9.81E-05	2.96E-07	2.90E-07	2.58E-08	2.49E-08
D	8.09E-01	3.15E-01	4.94E-01	8.89E-05	4.35E-05	1.31E-07	1.29E-07	1.14E-08	1.11E-08
E	5.12E-01	1.99E-01	3.13E-01	5.63E-05	2.76E-05	8.32E-08	8.14E-08	7.25E-09	7.00E-09
F	3.58E-01	1.39E-01	2.18E-01	3.93E-05	1.92E-05	5.81E-08	5.68E-08	5.06E-09	4.89E-09
G	2.34E-01	9.10E-02	1.43E-01	2.57E-05	1.26E-05	3.80E-08	3.72E-08	3.31E-09	3.20E-09
H	1.59E-01	6.19E-02	9.73E-02	1.75E-05	8.57E-06	2.59E-08	2.53E-08	2.25E-09	2.18E-09
I	1.38E-01	5.36E-02	8.41E-02	1.51E-05	7.41E-06	2.24E-08	2.19E-08	1.95E-09	1.88E-09
J	3.74E-02	1.45E-02	2.29E-02	4.11E-06	2.01E-06	6.08E-09	5.95E-09	5.29E-10	5.11E-10
K	7.99E-03	3.11E-03	4.88E-03	8.78E-07	4.30E-07	1.30E-09	1.27E-09	1.13E-10	1.09E-10
L	6.69E-03	2.60E-03	4.09E-03	3.38E-07	3.60E-07	1.09E-09	1.06E-09	9.47E-11	9.15E-11
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: TOTAL MILK BACKGROUND ACTIVITY = 1.2 E-3 UCI/LITER
DUE TO K-40



GOAT'S MILK

TABLE 10.6-B

DAY 2
(1101-1700 HR)

GOAT'S MILK

POST-PLUME DECAY TIME =

30.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	7.51E+00	4.21E+00	3.30E+00	9.12E-04	4.46E-04	3.54E-06	3.45E-06	1.25E-07	1.21E-07
B	4.08E+00	2.29E+00	1.79E+00	4.95E-04	2.42E-04	1.93E-06	1.87E-06	6.78E-08	6.57E-08
C	2.04E+00	1.14E+00	8.96E-01	2.47E-04	1.21E-04	9.62E-07	9.36E-07	3.39E-08	3.28E-08
D	9.05E-01	5.07E-01	3.98E-01	1.10E-04	5.37E-05	4.27E-07	4.15E-07	1.50E-08	1.46E-08
E	5.73E-01	3.21E-01	2.52E-01	6.95E-05	3.40E-05	2.70E-07	2.63E-07	9.51E-09	9.22E-09
F	4.00E-01	2.24E-01	1.76E-01	4.85E-05	2.37E-05	1.89E-07	1.84E-07	6.64E-09	6.43E-09
G	2.62E-01	1.47E-01	1.15E-01	3.18E-05	1.55E-05	1.23E-07	1.20E-07	4.35E-09	4.21E-09
H	1.78E-01	9.98E-02	7.83E-02	2.16E-05	1.06E-05	8.40E-08	8.18E-08	2.96E-09	2.87E-09
I	1.54E-01	8.63E-02	6.77E-02	1.87E-05	9.14E-06	7.26E-08	7.07E-08	2.56E-09	2.48E-09
J	4.18E-02	2.34E-02	1.84E-02	5.07E-06	2.48E-06	1.97E-08	1.92E-08	6.94E-10	6.73E-10
K	8.94E-03	5.01E-03	3.93E-03	1.08E-06	5.31E-07	4.22E-09	4.10E-09	1.48E-10	1.44E-10
L	7.49E-03	4.19E-03	3.29E-03	4.17E-07	4.45E-07	3.53E-09	3.44E-09	1.24E-10	1.20E-10
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: TOTAL MILK BACKGROUND ACTIVITY = 1.2 E-3 UCI/LITER
DUE TO K-40

GOAT'S MILK

DAY 3

TABLE 10.6-B

GOAT'S MILK

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	5.52E+00	3.80E+00	1.72E+00	1.75E-03	8.59E-04	3.28E-06	3.14E-06	2.97E-07	2.91E-07
B	3.00E+00	2.07E+00	9.35E-01	9.53E-04	4.67E-04	1.78E-06	1.71E-06	1.62E-07	1.58E-07
C	1.50E+00	1.03E+00	4.67E-01	4.76E-04	2.33E-04	8.89E-07	8.52E-07	8.07E-08	7.90E-08
D	6.65E-01	4.57E-01	2.07E-01	2.11E-04	1.03E-04	3.94E-07	3.78E-07	3.58E-08	3.50E-08
E	4.21E-01	2.90E-01	1.31E-01	1.34E-04	6.55E-05	2.50E-07	2.39E-07	2.27E-08	2.22E-08
F	2.94E-01	2.02E-01	9.15E-02	9.33E-05	4.57E-05	1.74E-07	1.67E-07	1.58E-08	1.55E-08
G	1.92E-01	1.32E-01	5.99E-02	6.11E-05	2.99E-05	1.14E-07	1.09E-07	1.04E-08	1.01E-08
H	1.31E-01	9.01E-02	4.08E-02	4.16E-05	2.04E-05	7.77E-08	7.44E-08	7.04E-09	6.90E-09
I	1.13E-01	7.79E-02	3.53E-02	3.59E-05	1.76E-05	6.72E-08	6.43E-08	6.09E-09	5.96E-09
J	3.07E-02	2.12E-02	9.58E-03	9.77E-06	4.78E-06	1.82E-08	1.75E-08	1.65E-09	1.62E-09
K	6.57E-03	4.52E-03	2.05E-03	2.09E-06	1.02E-06	3.90E-09	3.73E-09	3.54E-10	3.46E-10
L	5.50E-03	3.79E-03	1.71E-03	8.02E-07	8.56E-07	3.26E-09	3.13E-09	2.96E-10	2.90E-10
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: TOTAL MILK BACKGROUND ACTIVITY = 1.2 E-3 UCI/LITER
DUE TO K-40



GOAT'S MILK

TABLE 10.6-B

DAY 6

GOAT'S MILK

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	2.65E+00	2.52E+00	1.27E-01	1.50E-03	7.39E-04	2.39E-06	2.15E-06	2.45E-07	2.50E-07
B	1.44E+00	1.37E+00	6.88E-02	8.17E-04	4.01E-04	1.30E-06	1.17E-06	1.33E-07	1.36E-07
C	7.20E-01	6.85E-01	3.44E-02	4.08E-04	2.00E-04	6.50E-07	5.83E-07	6.65E-08	6.79E-08
D	3.19E-01	3.04E-01	1.52E-02	1.81E-04	8.89E-05	2.88E-07	2.59E-07	2.95E-08	3.01E-08
E	2.02E-01	1.92E-01	9.65E-03	1.15E-04	5.63E-05	1.83E-07	1.64E-07	1.87E-08	1.91E-08
F	1.41E-01	1.34E-01	6.74E-03	8.00E-05	3.93E-05	1.27E-07	1.14E-07	1.30E-08	1.33E-08
G	9.24E-02	8.79E-02	4.41E-03	5.24E-05	2.57E-05	8.34E-08	7.49E-08	8.54E-09	8.71E-09
H	6.29E-02	5.98E-02	3.00E-03	3.56E-05	1.75E-05	5.67E-08	5.09E-08	5.81E-09	5.93E-09
I	5.44E-02	5.17E-02	2.59E-03	3.08E-05	1.51E-05	4.91E-08	4.40E-08	5.02E-09	5.13E-09
J	1.48E-02	1.41E-02	7.05E-04	8.37E-06	4.11E-06	1.33E-08	1.20E-08	1.36E-09	1.39E-09
K	3.16E-03	3.00E-03	1.51E-04	1.79E-06	8.78E-07	2.85E-09	2.56E-09	2.92E-10	2.98E-10
L	2.64E-03	2.51E-03	1.26E-04	6.90E-07	7.36E-07	2.39E-09	2.14E-09	2.44E-10	2.49E-10
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: TOTAL MILK BACKGROUND ACTIVITY = 1.2 E-3 UCI/LITER
DUE TO K-40

GOAT'S MILK

TABLE B

DAY 21

GOAT'S MILK

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL MILK ACTIVITY UCI/LITER	I-131 UCI/LITER	I-133 UCI/LITER	CS-134 UCI/LITER	CS-137 UCI/LITER	BA-140 UCI/LITER	LA-140 UCI/LITER	SR-89 UCI/LITER	SR-90 UCI/LITER
A	3.27E-01	3.26E-01	2.73E-07	6.97E-04	3.46E-04	4.99E-07	3.24E-07	9.37E-08	1.17E-07
B	1.78E-01	1.77E-01	1.49E-07	3.78E-04	1.88E-04	2.71E-07	1.76E-07	5.09E-08	6.38E-08
C	8.88E-02	8.85E-02	7.42E-08	1.89E-04	9.40E-05	1.35E-07	8.79E-08	2.54E-08	3.18E-08
D	3.94E-02	3.93E-02	3.29E-08	8.38E-05	4.17E-05	6.00E-08	3.90E-08	1.13E-08	1.41E-08
E	2.49E-02	2.49E-02	2.08E-08	5.31E-05	2.64E-05	3.80E-08	2.47E-08	7.14E-09	8.95E-09
F	1.74E-02	1.74E-02	1.45E-08	3.71E-05	1.84E-05	2.65E-08	1.72E-08	4.98E-09	6.24E-09
G	1.14E-02	1.14E-02	9.52E-09	2.43E-05	1.21E-05	1.74E-08	1.13E-08	3.26E-09	4.09E-09
H	7.76E-03	7.73E-03	6.48E-09	1.65E-05	8.21E-06	1.18E-08	7.67E-09	2.22E-09	2.78E-09
I	6.71E-03	6.69E-03	5.60E-09	1.43E-05	7.10E-06	1.02E-08	6.64E-09	1.92E-09	2.40E-09
J	1.82E-03	1.82E-03	1.52E-09	3.88E-06	1.93E-06	2.78E-09	1.80E-09	5.22E-10	6.53E-10
K	3.89E-04	3.88E-04	3.25E-10	8.28E-07	4.12E-07	5.93E-10	3.85E-10	1.11E-10	1.40E-10
L	3.26E-04	3.25E-04	2.72E-10	3.24E-07	3.45E-07	4.97E-10	3.23E-10	9.33E-11	1.17E-10
M	1.20E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTE: TOTAL MILK BACKGROUND ACTIVITY = 1.2 E-3 UCI/LITER
DUE TO K-40



PRODUCE

E 10.7-A

DAY

FRESH PRODUCE WITH LARGE SURFACE AREA/MASS

(E.G., FRESH LEAFY VEGETABLES, BROCCOLI, GRAPES)

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	5.29E+01	1.79E+01	3.50E+01	8.59E-04	3.94E-04	2.00E-05	2.00E-05	9.30E-07	8.59E-07
B	2.87E+01	9.70E+00	1.90E+01	4.67E-04	2.14E-04	1.09E-05	1.09E-05	5.06E-07	4.67E-07
C	1.43E+01	4.84E+00	9.50E+00	2.33E-04	1.07E-04	5.43E-06	5.43E-06	2.52E-07	2.33E-07
D	6.37E+00	2.15E+00	4.22E+00	1.03E-04	4.74E-05	2.41E-06	2.41E-06	1.12E-07	1.03E-07
E	4.03E+00	1.36E+00	2.67E+00	6.55E-05	3.00E-05	1.53E-06	1.53E-06	7.09E-08	6.55E-08
F	2.81E+00	9.50E-01	1.86E+00	4.57E-05	2.09E-05	1.06E-06	1.06E-06	4.95E-08	4.57E-08
G	1.84E+00	6.22E-01	1.22E+00	2.99E-05	1.37E-05	6.97E-07	6.97E-07	3.24E-08	2.99E-08
H	1.25E+00	4.23E-01	8.30E-01	2.04E-05	9.33E-06	4.74E-07	4.74E-07	2.21E-08	2.04E-08
I	1.08E+00	3.66E-01	7.18E-01	1.76E-05	8.07E-06	4.10E-07	4.10E-07	1.91E-08	1.76E-08
J	9.97E-01	3.01E-01	5.91E-01	1.45E-05	6.64E-06	3.38E-07	3.38E-07	1.57E-08	1.45E-08
K	7.62E-01	2.57E-01	5.05E-01	1.24E-05	5.68E-06	2.88E-07	2.88E-07	1.34E-08	1.24E-08
L	6.39E-01	2.16E-01	4.23E-01	1.04E-05	4.75E-06	2.42E-07	2.42E-07	1.12E-08	1.04E-08
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

FRESH PRODUCE WITH LARGE MASS/SURFACE AREA

(E.G., APPLES, CAULIFLOWER)

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	2.64E+00	8.93E-01	1.75E+00	4.29E-05	1.97E-05	1.00E-06	1.00E-06	4.65E-08	4.30E-08
B	1.44E+00	4.85E-01	9.52E-01	2.33E-05	1.07E-05	5.44E-07	5.44E-07	2.53E-08	2.33E-08
C	7.17E-01	2.42E-01	4.75E-01	1.17E-05	5.34E-06	2.71E-07	2.71E-07	1.26E-08	1.17E-08
D	3.18E-01	1.07E-01	2.11E-01	5.17E-06	2.37E-06	1.20E-07	1.20E-07	5.60E-09	5.17E-09
E	2.02E-01	6.80E-02	1.34E-01	3.27E-06	1.50E-06	7.63E-08	7.63E-08	3.55E-09	3.27E-09
F	1.41E-01	4.75E-02	9.32E-02	2.29E-06	1.05E-06	5.32E-08	5.32E-08	2.48E-09	2.29E-09
G	9.21E-02	3.11E-02	6.10E-02	1.50E-06	6.86E-07	3.48E-08	3.48E-08	1.62E-09	1.50E-09
H	6.27E-02	2.12E-02	4.15E-02	1.02E-06	4.66E-07	2.37E-08	2.37E-08	1.10E-09	1.02E-09
I	5.42E-02	1.83E-02	3.59E-02	8.80E-07	4.03E-07	2.05E-08	2.05E-08	9.53E-10	8.80E-10
J	4.46E-02	1.51E-02	2.95E-02	7.24E-07	3.32E-07	1.69E-08	1.69E-08	7.85E-10	7.25E-10
K	3.81E-02	1.29E-02	2.52E-02	6.19E-07	2.84E-07	1.44E-08	1.44E-08	6.71E-10	6.19E-10
L	3.19E-02	1.08E-02	2.11E-02	5.19E-07	2.38E-07	1.21E-08	1.21E-08	5.62E-10	5.19E-10
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND VEGETATION ACTIVITY = 1.00 E-03 UCI/KG(WET) DUE TO K-40

2. FOR FOOD PREPARATION, ASSUME 10% OF ABOVE FOR WASHING, 1% OF ABOVE FOR PEELING

3. ASSUMES AGRICULTURAL PRODUCTIVITY OF 2.00 KG/M2



PRODUCE

10.7-A

DAY 2

(0500-1100 HR)

FRESH PRODUCE WITH LARGE SURFACE AREA/MASS

(E.G., FRESH LEAFY VEGETABLES, BROCCOLI, GRAPES)

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG (WET)	I-131 UCI/KG (WET)	I-133 UCI/KG (WET)	CS-134 UCI/KG (WET)	CS-137 UCI/KG (WET)	BA-140 UCI/KG (WET)	LA-140 UCI/KG (WET)	SR-89 UCI/KG (WET)	SR-90 UCI/KG (WET)
A	3.03E+01	1.56E+01	1.47E+01	8.16E-04	3.74E-04	1.80E-05	1.80E-05	8.73E-07	8.17E-07
B	1.64E+01	8.46E+00	7.98E+00	4.43E-04	2.03E-04	9.79E-06	9.79E-06	4.74E-07	4.44E-07
C	8.21E+00	4.23E+00	3.98E+00	2.21E-04	1.02E-04	4.89E-06	4.89E-06	2.37E-07	2.22E-07
D	3.64E+00	1.87E+00	1.77E+00	9.82E-05	4.51E-05	2.17E-06	2.17E-06	1.05E-07	9.83E-08
E	2.31E+00	1.19E+00	1.12E+00	6.22E-05	2.85E-05	1.37E-06	1.37E-06	6.65E-08	6.23E-08
F	1.61E+00	8.29E-01	7.81E-01	4.34E-05	1.99E-05	9.59E-07	9.59E-07	4.64E-08	4.35E-08
G	1.05E+00	5.42E-01	5.11E-01	2.84E-05	1.30E-05	6.28E-07	6.28E-07	3.04E-08	2.85E-08
H	7.17E-01	3.69E-01	3.48E-01	1.93E-05	8.87E-06	4.27E-07	4.27E-07	2.07E-08	1.94E-08
I	6.20E-01	3.19E-01	3.01E-01	1.67E-05	7.67E-06	3.69E-07	3.69E-07	1.79E-08	1.67E-08
J	5.10E-01	2.63E-01	2.48E-01	1.38E-05	6.31E-06	3.04E-07	3.04E-07	1.47E-08	1.38E-08
K	4.36E-01	2.25E-01	2.12E-01	1.18E-05	5.40E-06	2.60E-07	2.60E-07	1.26E-08	1.18E-08
L	3.65E-01	1.88E-01	1.77E-01	9.85E-06	4.52E-06	2.18E-07	2.18E-07	1.05E-08	9.87E-09
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

FRESH PRODUCE WITH LARGE MASS/SURFACE AREA
(E.G., APPLES, CAULIFLOWER)

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG (WET)	I-131 UCI/KG (WET)	I-133 UCI/KG (WET)	CS-134 UCI/KG (WET)	CS-137 UCI/KG (WET)	BA-140 UCI/KG (WET)	LA-140 UCI/KG (WET)	SR-89 UCI/KG (WET)	SR-90 UCI/KG (WET)
A	1.51E+00	7.79E-01	7.34E-01	4.08E-05	1.87E-05	9.01E-07	9.01E-07	4.36E-08	4.08E-08
B	8.22E-01	4.23E-01	3.99E-01	2.22E-05	1.02E-05	4.90E-07	4.90E-07	2.37E-08	2.22E-08
C	4.10E-01	2.11E-01	1.99E-01	1.11E-05	5.08E-06	2.44E-07	2.44E-07	1.18E-08	1.11E-08
D	1.82E-01	9.37E-02	8.83E-02	4.91E-06	2.25E-06	1.08E-07	1.08E-07	5.25E-09	4.92E-09
E	1.15E-01	5.94E-02	5.59E-02	3.11E-06	1.43E-06	6.87E-08	6.87E-08	3.33E-09	3.11E-09
F	8.05E-02	4.14E-02	3.90E-02	2.17E-06	9.96E-07	4.79E-08	4.79E-08	2.32E-09	2.17E-09
G	5.27E-02	2.71E-02	2.56E-02	1.42E-06	6.52E-07	3.14E-08	3.14E-08	1.52E-09	1.42E-09
H	3.58E-02	1.85E-02	1.74E-02	9.67E-07	4.44E-07	2.14E-08	2.14E-08	1.03E-09	9.68E-10
I	3.10E-02	1.60E-02	1.50E-02	8.36E-07	3.84E-07	1.85E-08	1.85E-08	8.94E-10	8.37E-10
J	2.55E-02	1.31E-02	1.24E-02	6.88E-07	3.16E-07	1.52E-08	1.52E-08	7.36E-10	6.89E-10
K	2.18E-02	1.12E-02	1.06E-02	5.88E-07	2.70E-07	1.30E-08	1.30E-08	6.29E-10	5.89E-10
L	1.83E-02	9.40E-03	8.86E-03	4.93E-07	2.26E-07	1.09E-08	1.09E-08	5.27E-10	4.93E-10
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND VEGETATION ACTIVITY = 1.00 E-03 UCI/KG (WET) DUE TO K-40

2. FOR FOOD PREPARATION, ASSUME 10% OF ABOVE FOR WASHING, 1% OF ABOVE FOR PEELING

3. ASSUMES AGRICULTURAL PRODUCTIVITY OF 2.00 KG/M2



PRODUCE

10.7-A

DAY 2
(1101-1700 HR)

FRESH PRODUCE WITH LARGE SURFACE AREA/MASS
(E.G., FRESH LEAFY VEGETABLES, BROCCOLI, GRAPES)

POST-PLUME DECAY TIME = 30.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	2.69E+01	1.51E+01	1.18E+01	8.06E-04	3.70E-04	1.76E-05	1.76E-05	8.59E-07	8.07E-07
B	1.46E+01	8.18E+00	6.42E+00	4.38E-04	2.01E-04	9.54E-06	9.54E-06	4.67E-07	4.38E-07
C	7.29E+00	4.08E+00	3.20E+00	2.19E-04	1.00E-04	4.76E-06	4.76E-06	2.33E-07	2.19E-07
D	3.23E+00	1.81E+00	1.42E+00	9.70E-05	4.45E-05	2.11E-06	2.11E-06	1.03E-07	9.71E-08
E	2.05E+00	1.15E+00	9.00E-01	6.14E-05	2.82E-05	1.34E-06	1.34E-06	6.55E-08	6.15E-08
F	1.43E+00	8.01E-01	6.28E-01	4.29E-05	1.97E-05	9.34E-07	9.34E-07	4.57E-08	4.29E-08
G	9.36E-01	5.24E-01	4.11E-01	2.81E-05	1.29E-05	6.12E-07	6.12E-07	2.99E-08	2.81E-08
H	6.37E-01	3.57E-01	2.80E-01	1.91E-05	8.76E-06	4.16E-07	4.16E-07	2.04E-08	1.91E-08
I	5.50E-01	3.08E-01	2.42E-01	1.65E-05	7.57E-06	3.60E-07	3.60E-07	1.76E-08	1.65E-08
J	4.53E-01	2.54E-01	1.99E-01	1.36E-05	6.23E-06	2.96E-07	2.96E-07	1.45E-08	1.36E-08
K	3.87E-01	2.17E-01	1.70E-01	1.16E-05	5.33E-06	2.53E-07	2.53E-07	1.24E-08	1.16E-08
L	3.24E-01	1.82E-01	1.43E-01	9.73E-06	4.46E-06	2.12E-07	2.12E-07	1.04E-08	9.74E-09
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

FRESH PRODUCE WITH LARGE MASS/SURFACE AREA
(E.G., APPLES, CAULIFLOWER)

POST-PLUME DECAY TIME = 30.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	1.34E+00	7.53E-01	5.90E-01	4.03E-05	1.85E-05	8.78E-07	8.78E-07	4.29E-08	4.03E-08
B	7.30E-01	4.09E-01	3.21E-01	2.19E-05	1.00E-05	4.77E-07	4.77E-07	2.33E-08	2.19E-08
C	3.64E-01	2.04E-01	1.60E-01	1.09E-05	5.01E-06	2.38E-07	2.38E-07	1.17E-08	1.09E-08
D	1.62E-01	9.06E-02	7.11E-02	4.85E-06	2.22E-06	1.06E-07	1.06E-07	5.17E-09	4.86E-09
E	1.02E-01	5.74E-02	4.50E-02	3.07E-06	1.41E-06	6.69E-08	6.69E-08	3.27E-09	3.07E-09
F	7.15E-02	4.00E-02	3.14E-02	2.14E-06	9.83E-07	4.67E-08	4.67E-08	2.28E-09	2.15E-09
G	4.68E-02	2.62E-02	2.06E-02	1.40E-06	6.44E-07	3.06E-08	3.06E-08	1.50E-09	1.40E-09
H	3.18E-02	1.78E-02	1.40E-02	9.55E-07	4.38E-07	2.08E-08	2.08E-08	1.02E-09	9.56E-10
I	2.75E-02	1.54E-02	1.21E-02	8.25E-07	3.79E-07	1.80E-08	1.80E-08	8.80E-10	8.27E-10
J	2.27E-02	1.27E-02	9.96E-03	6.79E-07	3.12E-07	1.48E-08	1.48E-08	7.24E-10	6.80E-10
K	1.94E-02	1.08E-02	8.51E-03	5.81E-07	2.66E-07	1.27E-08	1.27E-08	6.19E-10	5.81E-10
L	1.62E-02	9.09E-03	7.13E-03	4.86E-07	2.23E-07	1.06E-08	1.06E-08	5.19E-10	4.87E-10
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND VEGETATION ACTIVITY = 1.00 E-03 UCI/KG(WET) DUE TO K-40

2. FOR FOOD PREPARATION, ASSUME 10% OF ABOVE FOR WASHING, 1% OF ABOVE FOR PEELING

3. ASSUMES AGRICULTURAL PRODUCTIVITY OF 2.00 KG/M²

FRESH PRODUCE WITH LARGE SURFACE AREA/MASS

(E.G., FRESH LEAFY VEGETABLES, BROCCOLI, GRAPES)

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG (WET)	I-131 UCI/KG (WET)	I-133 UCI/KG (WET)	CS-134 UCI/KG (WET)	CS-137 UCI/KG (WET)	BA-140 UCI/KG (WET)	LA-140 UCI/KG (WET)	SR-89 UCI/KG (WET)	SR-90 UCI/KG (WET)
A	1.97E+01	1.36E+01	6.15E+00	7.75E-04	3.56E-04	1.62E-05	1.62E-05	8.18E-07	7.77E-07
B	1.07E+01	7.38E+00	3.34E+00	4.21E-04	1.93E-04	8.82E-06	8.82E-06	4.45E-07	4.22E-07
C	5.36E+00	3.69E+00	1.67E+00	2.10E-04	9.66E-05	4.40E-06	4.40E-06	2.22E-07	2.11E-07
D	2.38E+00	1.64E+00	7.40E-01	9.33E-05	4.28E-05	1.95E-06	1.95E-06	9.85E-08	9.35E-08
E	1.50E+00	1.04E+00	4.69E-01	5.91E-05	2.71E-05	1.24E-06	1.24E-06	6.24E-08	5.92E-08
F	1.05E+00	7.23E-01	3.27E-01	4.12E-05	1.89E-05	8.64E-07	8.64E-07	4.35E-08	4.13E-08
G	6.88E-01	4.73E-01	2.14E-01	2.70E-05	1.24E-05	5.65E-07	5.65E-07	2.85E-08	2.71E-08
H	4.68E-01	3.22E-01	1.46E-01	1.84E-05	8.43E-06	3.85E-07	3.85E-07	1.94E-08	1.84E-08
I	4.04E-01	2.78E-01	1.26E-01	1.59E-05	7.29E-06	3.33E-07	3.33E-07	1.68E-08	1.59E-08
J	3.33E-01	2.29E-01	1.04E-01	1.31E-05	6.00E-06	2.74E-07	2.74E-07	1.38E-08	1.31E-08
K	2.85E-01	1.96E-01	8.87E-02	1.12E-05	5.13E-06	2.34E-07	2.34E-07	1.18E-08	1.12E-08
L	2.38E-01	1.64E-01	7.43E-02	9.36E-06	4.30E-06	1.96E-07	1.96E-07	9.88E-09	9.38E-09
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

FRESH PRODUCE WITH LARGE MASS/SURFACE AREA
(E.G., APPLES, CAULIFLOWER)

POST-PLUME DECAY TIME =

48.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG (WET)	I-131 UCI/KG (WET)	I-133 UCI/KG (WET)	CS-134 UCI/KG (WET)	CS-137 UCI/KG (WET)	BA-140 UCI/KG (WET)	LA-140 UCI/KG (WET)	SR-89 UCI/KG (WET)	SR-90 UCI/KG (WET)
A	9.87E-01	6.79E-01	3.08E-01	3.88E-05	1.78E-05	8.12E-07	8.12E-07	4.09E-08	3.88E-08
B	5.36E-01	3.69E-01	1.67E-01	2.11E-05	9.67E-06	4.41E-07	4.41E-07	2.22E-08	2.11E-08
C	2.68E-01	1.84E-01	8.34E-02	1.05E-05	4.83E-06	2.20E-07	2.20E-07	1.11E-08	1.05E-08
D	1.19E-01	8.18E-02	3.70E-02	4.67E-06	2.14E-06	9.77E-08	9.77E-08	4.93E-09	4.68E-09
E	7.52E-02	5.18E-02	2.34E-02	2.95E-06	1.36E-06	6.19E-08	6.19E-08	3.12E-09	2.96E-09
F	5.25E-02	3.62E-02	1.64E-02	2.06E-06	9.47E-07	4.32E-08	4.32E-08	2.18E-09	2.07E-09
G	3.44E-02	2.37E-02	1.07E-02	1.35E-06	6.20E-07	2.83E-08	2.83E-08	1.43E-09	1.35E-09
H	2.34E-02	1.61E-02	7.29E-03	9.19E-07	4.22E-07	1.92E-08	1.92E-08	9.70E-10	9.20E-10
I	2.02E-02	1.39E-02	6.30E-03	7.94E-07	3.65E-07	1.66E-08	1.66E-08	8.39E-10	7.96E-10
J	1.66E-02	1.15E-02	5.19E-03	6.54E-07	3.00E-07	1.37E-08	1.37E-08	6.90E-10	6.55E-10
K	1.42E-02	9.79E-03	4.43E-03	5.59E-07	2.57E-07	1.17E-08	1.17E-08	5.90E-10	5.60E-10
L	1.19E-02	8.20E-03	3.71E-03	4.68E-07	2.15E-07	9.80E-09	9.80E-09	4.94E-10	4.69E-10
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND VEGETATION ACTIVITY = 1.00 E-03 UCI/KG (WET) DUE TO K-40

2. FOR FOOD PREPARATION, ASSUME 10% OF ABOVE FOR WASHING, 1% OF ABOVE FOR PEELING

3. ASSUMES AGRICULTURAL PRODUCTIVITY OF 2.00 KG/M2

PRODUCE

10.7-A

DAY 6

FRESH PRODUCE WITH LARGE SURFACE AREA/MASS

(E.G., FRESH LEAFY VEGETABLES, BROCCOLI, GRAPES)

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	9.48E+00	9.03E+00	4.53E-01	6.65E-04	3.06E-04	1.19E-05	1.19E-05	6.75E-07	6.68E-07
B	5.15E+00	4.90E+00	2.46E-01	3.61E-04	1.66E-04	6.45E-06	6.45E-06	3.67E-07	3.63E-07
C	2.57E+00	2.45E+00	1.23E-01	1.80E-04	8.30E-05	3.22E-06	3.22E-06	1.83E-07	1.81E-07
D	1.14E+00	1.09E+00	5.45E-02	8.00E-05	3.68E-05	1.43E-06	1.43E-06	8.13E-08	8.04E-08
E	7.23E-01	6.88E-01	3.45E-02	5.07E-05	2.33E-05	9.04E-07	9.04E-07	5.15E-08	5.09E-08
F	5.04E-01	4.80E-01	2.41E-02	3.54E-05	1.63E-05	6.31E-07	6.31E-07	3.59E-08	3.55E-08
G	3.30E-01	3.14E-01	1.58E-02	2.31E-05	1.07E-05	4.13E-07	4.13E-07	2.35E-08	2.33E-08
H	2.25E-01	2.14E-01	1.07E-02	1.58E-05	7.25E-06	2.81E-07	2.81E-07	1.60E-08	1.58E-08
I	1.94E-01	1.85E-01	9.28E-03	1.36E-05	6.27E-06	2.43E-07	2.43E-07	1.38E-08	1.37E-08
J	1.60E-01	1.52E-01	7.64E-03	1.12E-05	5.16E-06	2.00E-07	2.00E-07	1.14E-08	1.13E-08
K	1.37E-01	1.30E-01	6.53E-03	9.58E-06	4.41E-06	1.71E-07	1.71E-07	9.73E-09	9.63E-09
L	1.14E-01	1.09E-01	5.47E-03	8.03E-06	3.69E-06	1.43E-07	1.43E-07	8.15E-09	8.06E-09
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

FRESH PRODUCE WITH LARGE MASS/SURFACE AREA.

(E.G., APPLES, CAULIFLOWER)

POST-PLUME DECAY TIME =

120.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	4.74E-01	4.51E-01	2.26E-02	3.32E-05	1.53E-05	5.93E-07	5.93E-07	3.38E-08	3.34E-08
B	2.58E-01	2.45E-01	1.23E-02	1.81E-05	8.31E-06	3.22E-07	3.22E-07	1.83E-08	1.81E-08
C	1.29E-01	1.22E-01	6.14E-03	9.02E-06	4.15E-06	1.61E-07	1.61E-07	9.16E-09	9.06E-09
D	5.71E-02	5.43E-02	2.72E-03	4.00E-06	1.84E-06	7.14E-08	7.14E-08	4.06E-09	4.02E-09
E	3.61E-02	3.44E-02	1.73E-03	2.53E-06	1.17E-06	4.52E-08	4.52E-08	2.57E-09	2.54E-09
F	2.52E-02	2.40E-02	1.20E-03	1.77E-06	8.14E-07	3.16E-08	3.16E-08	1.80E-09	1.78E-09
G	1.65E-02	1.57E-02	7.88E-04	1.16E-06	5.33E-07	2.07E-08	2.07E-08	1.18E-09	1.16E-09
H	1.12E-02	1.07E-02	5.36E-04	7.88E-07	3.63E-07	1.41E-08	1.41E-08	8.00E-10	7.91E-10
I	9.71E-03	9.25E-03	4.64E-04	6.81E-07	3.13E-07	1.22E-08	1.22E-08	6.92E-10	6.84E-10
J	7.99E-03	7.61E-03	3.82E-04	5.61E-07	2.58E-07	1.00E-08	1.00E-08	5.70E-10	5.63E-10
K	6.83E-03	6.50E-03	3.26E-04	4.79E-07	2.21E-07	8.55E-09	8.55E-09	4.87E-10	4.81E-10
L	5.72E-03	5.45E-03	2.73E-04	4.01E-07	1.85E-07	7.16E-09	7.16E-09	4.08E-10	4.03E-10
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND VEGETATION ACTIVITY = $1.00 \text{ E-03 UCI/KG(WET)}$ DUE TO K-40

2. FOR FOOD PREPARATION. ASSUME 10% OF ABOVE FOR WASHING 1% OF ABOVE FOR PEELING

PRODUCE

TABLE 10.7-A

FRESH PRODUCE WITH LARGE SURFACE AREA/MASS

(E.G., FRESH LEAFY VEGETABLES, BROCCOLI, GRAPES)

POST-PLUME DECAY TIME =

480.0 HOURS

DAY 21:

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	1.17E+00	1.17E+00	9.78E-07	3.08E-04	1.44E-04	2.47E-06	2.47E-06	2.58E-07	3.14E-07
B	6.34E-01	6.34E-01	5.31E-07	1.67E-04	7.80E-05	1.34E-06	1.34E-06	1.40E-07	1.70E-07
C	3.17E-01	3.16E-01	2.65E-07	8.36E-05	3.90E-05	6.70E-07	6.70E-07	7.00E-08	8.51E-08
D	1.40E-01	1.40E-01	1.18E-07	3.71E-05	1.73E-05	2.97E-07	2.97E-07	3.11E-08	3.77E-08
E	8.90E-02	8.89E-02	7.45E-08	2.35E-05	1.09E-05	1.88E-07	1.88E-07	1.97E-08	2.39E-08
F	6.21E-02	6.21E-02	5.20E-08	1.64E-05	7.64E-06	1.31E-07	1.31E-07	1.37E-08	1.67E-08
G	4.06E-02	4.06E-02	3.40E-08	1.07E-05	5.00E-06	8.61E-08	8.61E-08	8.99E-09	1.09E-08
H	2.77E-02	2.76E-02	2.32E-08	7.30E-06	3.40E-06	5.86E-08	5.86E-08	6.12E-09	7.43E-09
I	2.79E-02	2.39E-02	2.00E-08	6.31E-06	2.94E-06	5.06E-08	5.06E-08	5.29E-09	6.42E-09
J	1.97E-02	1.97E-02	1.65E-08	5.19E-06	2.42E-06	4.17E-08	4.17E-08	4.35E-09	5.29E-09
K	1.68E-02	1.68E-02	1.41E-08	4.44E-06	2.07E-06	3.56E-08	3.56E-08	3.72E-09	4.52E-09
L	1.41E-02	1.41E-02	1.18E-08	3.72E-06	1.73E-06	2.98E-08	2.98E-08	3.12E-09	3.79E-09
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.7-B

FRESH PRODUCE WITH LARGE MASS/SURFACE AREA

(E.G., APPLES, CAULIFLOWER)

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	5.83E-02	5.83E-02	4.89E-08	1.54E-05	7.18E-06	1.24E-07	1.24E-07	1.29E-08	1.57E-08
B	3.17E-02	3.17E-02	2.66E-08	8.37E-06	3.90E-06	6.71E-08	6.71E-08	7.01E-09	8.52E-09
C	1.58E-02	1.58E-02	1.33E-08	4.18E-06	1.95E-06	3.35E-08	3.35E-08	3.50E-09	4.25E-09
D	7.02E-03	7.02E-03	5.88E-09	1.85E-06	8.64E-07	1.49E-08	1.49E-08	1.55E-09	1.89E-09
E	4.45E-03	4.45E-03	3.73E-09	1.17E-06	5.47E-07	9.42E-09	9.42E-09	9.84E-10	1.19E-09
F	3.10E-03	3.10E-03	2.60E-09	8.19E-07	3.82E-07	6.57E-09	6.57E-09	6.87E-10	8.34E-10
G	2.03E-03	2.03E-03	1.70E-09	5.36E-07	2.50E-07	4.30E-09	4.30E-09	4.50E-10	5.46E-10
H	1.38E-03	1.38E-03	1.16E-09	3.65E-07	1.70E-07	2.93E-09	2.93E-09	3.06E-10	3.72E-10
I	1.20E-03	1.20E-03	1.00E-09	3.16E-07	1.47E-07	2.53E-09	2.53E-09	2.64E-10	3.21E-10
J	9.84E-04	9.84E-04	8.24E-10	2.60E-07	1.21E-07	2.08E-09	2.08E-09	2.18E-10	2.64E-10
K	8.41E-04	8.41E-04	7.05E-10	2.22E-07	1.03E-07	1.78E-09	1.78E-09	1.86E-10	2.26E-10
L	7.05E-04	7.04E-04	5.90E-10	1.86E-07	8.67E-08	1.49E-09	1.49E-09	1.56E-10	1.89E-10
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND VEGETATION ACTIVITY = 1.00 E-03 UCI/KG(WET) DUE TO K-40

2. FOR FOOD PREPARATION, ASSUME 10% OF ABOVE FOR WASHING, 1% OF ABOVE FOR PEELING

ROOT VEG.

TABLE 10.7-C

DAY 2
(0500-1100 HR)
(1101-1700 HR)

ROOT VEGETABLES, POTATOES, ONIONS

POST-PLUME DECAY TIME =

24.0 HOURS

ZONE	TOTAL ACTIVITY UCI/KG(WET)	I-131 UCI/KG(WET)	I-133 UCI/KG(WET)	CS-134 UCI/KG(WET)	CS-137 UCI/KG(WET)	BA-140 UCI/KG(WET)	LA-140 UCI/KG(WET)	SR-89 UCI/KG(WET)	SR-90 UCI/KG(WET)
A	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
B	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
C	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
D	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
E	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
F	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
G	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
H	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
I	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
J	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
K	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
L	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06
M	1.00E-03	L.T. LLD	L.T. LLD	L.T. LLD	3.50E-06	L.T. LLD	L.T. LLD	L.T. LLD	2.50E-06

NOTE: 1. BACKGROUND ACTIVITY IN ROOT VEGETABLES = 1.00 E-3 UCI/KG(WET) DUE TO K-40 AND SR-90 AND CS-137 FROM WEAPONS FALLOUT



SURFACE WATER

TABLE 10.8-A

DAY 1

SURFACE WATER ISOTOPIC ACTIVITY
(SMALL LAKES, PONDS, CREEKS, RESERVOIRS)

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	2.19E-02	3.57E-03	7.00E-03	8.59E-07	3.94E-07	2.00E-08	1.98E-08	9.30E-10	8.59E-10
B	1.19E-02	1.94E-03	3.81E-03	4.67E-07	2.14E-07	1.09E-08	1.08E-08	5.05E-10	4.67E-10
C	5.95E-03	9.68E-04	1.90E-03	2.33E-07	1.07E-07	5.43E-09	5.38E-09	2.52E-10	2.33E-10
D	2.64E-03	4.30E-04	8.43E-04	1.03E-07	4.74E-08	2.41E-09	2.39E-09	1.12E-10	1.03E-10
E	1.67E-03	2.72E-04	5.34E-04	6.54E-08	3.00E-08	1.52E-09	1.51E-09	7.09E-11	6.54E-11
F	1.17E-03	1.90E-04	3.73E-04	4.57E-08	2.09E-08	1.06E-09	1.05E-09	4.95E-11	4.57E-11
G	7.64E-04	1.24E-04	2.44E-04	2.99E-08	1.37E-08	6.97E-10	6.90E-10	3.24E-11	2.99E-11
H	5.20E-04	8.46E-05	1.66E-04	2.03E-08	9.33E-09	4.74E-10	4.70E-10	2.20E-11	2.03E-11
I	4.50E-04	7.31E-05	1.44E-04	1.76E-08	8.06E-09	4.10E-10	4.06E-10	1.91E-11	1.76E-11
J	1.22E-04	6.02E-05	1.18E-04	1.45E-08	6.64E-09	3.37E-10	3.34E-10	1.57E-11	1.45E-11
K	2.61E-05	5.15E-05	1.01E-04	1.24E-08	5.67E-09	2.88E-10	2.86E-10	1.34E-11	1.24E-11
L	2.19E-05	4.31E-05	8.46E-05	1.04E-08	4.75E-09	2.42E-10	2.39E-10	1.12E-11	1.04E-11
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.8-B

SURFACE WATER ISOTOPIC ACTIVITY
(LARGE LAKES, RIVERS)

POST-PLUME DECAY TIME =

0.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	2.19E-04	3.57E-05	7.00E-05	8.59E-09	3.94E-09	2.00E-10	1.98E-10	9.30E-12	8.59E-12
B	1.19E-04	1.94E-05	3.81E-05	4.67E-09	2.14E-09	1.09E-10	1.08E-10	5.05E-12	4.67E-12
C	5.95E-05	9.68E-06	1.90E-05	2.33E-09	1.07E-09	5.43E-11	5.38E-11	2.52E-12	2.33E-12
D	2.64E-05	4.30E-06	8.43E-06	1.03E-09	4.74E-10	2.41E-11	2.39E-11	1.12E-12	1.03E-12
E	1.67E-05	2.72E-06	5.34E-06	6.54E-10	3.00E-10	1.52E-11	1.51E-11	7.09E-13	6.54E-13
F	1.17E-05	1.90E-06	3.73E-06	4.57E-10	2.09E-10	1.06E-11	1.05E-11	4.95E-13	4.57E-13
G	7.64E-06	1.24E-06	2.44E-06	2.99E-10	1.37E-10	6.97E-12	6.90E-12	3.24E-13	2.99E-13
H	5.20E-06	8.46E-07	1.66E-06	2.03E-10	9.33E-11	4.74E-12	4.70E-12	2.20E-13	2.03E-13
I	4.50E-06	7.31E-07	1.44E-06	1.76E-10	8.06E-11	4.10E-12	4.06E-12	1.91E-13	1.76E-13
J	1.22E-06	6.02E-07	1.18E-06	1.45E-10	6.64E-11	3.37E-12	3.34E-12	1.57E-13	1.45E-13
K	2.61E-07	5.15E-07	1.01E-06	1.24E-10	5.67E-11	2.88E-12	2.86E-12	1.34E-13	1.24E-13
L	2.19E-07	4.31E-07	8.46E-07	1.04E-10	4.75E-11	2.42E-12	2.39E-12	1.12E-13	1.04E-13
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND ACTIVITY = 1E-08 UCI/CC

2. FOR SMALL PUDDLES AND FALLOUT COLLECTORS, ASSUME 100 TIMES TABLE 10.8-A CONCENTRATIONS



SURFACE WATER

TABLE 10.8-A

DAY 2
(0500-1100 HR)

SURFACE WATER ISOTOPIC ACTIVITY
(SMALL LAKES, PONDS, CREEKS, RESERVOIRS)

POST-PLUME DECAY TIME = 24.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	6.87E-03	3.28E-03	3.09E-03	8.58E-07	3.93E-07	1.90E-08	1.93E-08	9.17E-10	8.59E-10
B	3.73E-03	1.78E-03	1.68E-03	4.66E-07	2.14E-07	1.03E-08	1.05E-08	4.98E-10	4.67E-10
C	1.86E-03	8.89E-04	8.38E-04	2.33E-07	1.07E-07	5.14E-09	5.25E-09	2.49E-10	2.33E-10
D	8.27E-04	3.94E-04	3.72E-04	1.03E-07	4.74E-08	2.28E-09	2.33E-09	1.10E-10	1.03E-10
E	5.24E-04	2.50E-04	2.35E-04	6.54E-08	3.00E-08	1.44E-09	1.47E-09	6.99E-11	6.54E-11
F	3.66E-04	1.74E-04	1.64E-04	4.56E-08	2.09E-08	1.01E-09	1.03E-09	4.88E-11	4.57E-11
G	2.39E-04	1.14E-04	1.08E-04	2.99E-08	1.37E-08	6.60E-10	6.74E-10	3.19E-11	2.99E-11
H	1.63E-04	7.76E-05	7.32E-05	2.03E-08	9.33E-09	4.49E-10	4.58E-10	2.17E-11	2.03E-11
I	1.41E-04	6.71E-05	6.33E-05	1.78E-08	8.08E-09	3.88E-10	3.96E-10	1.88E-11	1.76E-11
J	3.82E-05	5.52E-05	5.21E-05	1.45E-08	6.64E-09	3.20E-10	3.26E-10	1.55E-11	1.45E-11
K	8.17E-06	4.72E-05	4.45E-05	1.24E-08	5.67E-09	2.73E-10	2.79E-10	1.32E-11	1.24E-11
L	6.84E-06	3.96E-05	3.73E-05	1.04E-08	4.75E-09	2.29E-10	2.34E-10	1.11E-11	1.04E-11
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.8-B

SURFACE WATER ISOTOPIC ACTIVITY
(LARGE LAKES, RIVERS)

POST-PLUME DECAY TIME = 24.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	6.87E-05	3.28E-05	3.09E-05	8.58E-09	3.93E-09	1.90E-10	1.93E-10	9.17E-12	8.59E-12
B	3.73E-05	1.78E-05	1.68E-05	4.66E-09	2.14E-09	1.03E-10	1.05E-10	4.98E-12	4.67E-12
C	1.86E-05	8.89E-06	8.38E-06	2.33E-09	1.07E-09	5.14E-11	5.25E-11	2.49E-12	2.33E-12
D	8.27E-06	3.94E-06	3.72E-06	1.03E-09	4.74E-10	2.28E-11	2.33E-11	1.10E-12	1.03E-12
E	5.24E-06	2.50E-06	2.35E-06	6.54E-10	3.00E-10	1.44E-11	1.47E-11	6.99E-13	6.54E-13
F	3.66E-06	1.74E-06	1.64E-06	4.56E-10	2.09E-10	1.01E-11	1.03E-11	4.88E-13	4.57E-13
G	2.39E-06	1.14E-06	1.08E-06	2.99E-10	1.37E-10	6.60E-12	6.74E-12	3.19E-13	2.99E-13
H	1.63E-06	7.76E-07	7.32E-07	2.03E-10	9.33E-11	4.49E-12	4.58E-12	2.17E-13	2.03E-13
I	1.41E-06	6.71E-07	6.33E-07	1.78E-10	8.08E-11	3.88E-12	3.96E-12	1.88E-13	1.76E-13
J	3.82E-07	5.52E-07	5.21E-07	1.45E-10	6.64E-11	3.20E-12	3.26E-12	1.55E-13	1.45E-13
K	8.17E-08	4.72E-07	4.45E-07	1.24E-10	5.67E-11	2.73E-12	2.79E-12	1.32E-13	1.24E-13
L	6.84E-08	3.96E-07	3.73E-07	1.04E-10	4.75E-11	2.29E-12	2.34E-12	1.11E-13	1.04E-13
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND ACTIVITY = 1E-08 UCI/CC
2. FOR SMALL PUDDLES AND FALLOUT COLLECTORS, ASSUME 100 TIMES TABLE 10.8-A CONCENTRATIONS

SURFACE WATER

TABLE 10.8-A

DAY 2
(1101-1700 HR)

SURFACE WATER ISOTOPIC ACTIVITY
(SMALL LAKES, PONDS, CREEKS, RESERVOIRS)

POST-PLUME DECAY TIME = 30.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	5.99E-03	3.21E-03	2.52E-03	8.58E-07	3.93E-07	1.87E-08	1.91E-08	9.14E-10	8.59E-10
B	3.26E-03	1.74E-03	1.37E-03	4.68E-07	2.14E-07	1.02E-08	1.04E-08	4.97E-10	4.67E-10
C	1.63E-03	8.70E-04	6.82E-04	2.33E-07	1.07E-07	5.07E-09	5.18E-09	2.48E-10	2.33E-10
D	7.21E-04	3.86E-04	3.03E-04	1.03E-07	4.74E-08	2.25E-09	2.30E-09	1.10E-10	1.03E-10
E	4.57E-04	2.44E-04	1.92E-04	6.54E-08	3.00E-08	1.43E-09	1.46E-09	6.97E-11	6.54E-11
F	3.19E-04	1.71E-04	1.34E-04	4.56E-08	2.09E-08	9.95E-10	1.02E-09	4.86E-11	4.57E-11
G	2.09E-04	1.12E-04	8.76E-05	2.99E-08	1.37E-08	6.51E-10	6.65E-10	3.18E-11	2.99E-11
H	1.42E-04	7.60E-05	5.96E-05	2.03E-08	9.33E-09	4.43E-10	4.53E-10	2.17E-11	2.03E-11
I	1.23E-04	6.57E-05	5.15E-05	1.76E-08	8.06E-09	3.83E-10	3.91E-10	1.87E-11	1.76E-11
J	3.34E-05	5.41E-05	4.24E-05	1.45E-08	6.64E-09	3.15E-10	3.22E-10	1.54E-11	1.45E-11
K	7.13E-06	4.62E-06	3.63E-06	1.24E-08	5.67E-09	2.69E-10	2.75E-10	1.32E-11	1.24E-11
L	5.97E-06	3.87E-06	3.04E-06	1.04E-08	4.75E-09	2.26E-10	2.31E-10	1.10E-11	1.04E-11
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.8-B

SURFACE WATER ISOTOPIC ACTIVITY
(LARGE LAKES, RIVERS)

POST-PLUME DECAY TIME = 30.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	5.99E-05	3.21E-05	2.52E-05	8.58E-09	3.93E-09	1.87E-10	1.91E-10	9.14E-12	8.59E-12
B	3.26E-05	1.74E-05	1.37E-05	4.68E-09	2.14E-09	1.02E-10	1.04E-10	4.97E-12	4.67E-12
C	1.63E-05	8.70E-06	6.82E-06	2.33E-09	1.07E-09	5.07E-11	5.18E-11	2.48E-12	2.33E-12
D	7.21E-06	3.86E-06	3.03E-06	1.03E-09	4.74E-10	2.25E-11	2.30E-11	1.10E-12	1.03E-12
E	4.57E-06	2.44E-06	1.92E-06	6.54E-10	3.00E-10	1.43E-11	1.46E-11	6.97E-13	6.54E-13
F	3.19E-06	1.71E-06	1.34E-06	4.56E-10	2.09E-10	9.95E-12	1.02E-11	4.86E-13	4.57E-13
G	2.09E-06	1.12E-06	8.76E-07	2.99E-10	1.37E-10	6.51E-12	6.65E-12	3.18E-13	2.99E-13
H	1.42E-06	7.60E-07	5.96E-07	2.03E-10	9.33E-11	4.43E-12	4.53E-12	2.17E-13	2.03E-13
I	1.23E-06	6.57E-07	5.15E-07	1.76E-10	8.06E-11	3.83E-12	3.91E-12	1.87E-13	1.76E-13
J	3.34E-07	5.41E-07	4.24E-07	1.45E-10	6.64E-11	3.15E-12	3.22E-12	1.54E-13	1.45E-13
K	7.13E-08	4.62E-07	3.63E-07	1.24E-10	5.67E-11	2.69E-12	2.75E-12	1.32E-13	1.24E-13
L	5.97E-08	3.87E-07	3.04E-07	1.04E-10	4.75E-11	2.26E-12	2.31E-12	1.10E-13	1.04E-13
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND ACTIVITY = 1E-08 UCI/CC

2. FOR SMALL PUDDLES AND FALLOUT COLLECTORS, ASSUME 100 TIMES TABLE 10.8-A CONCENTRATIONS



SURFACE WATER

TABLE 10.8-A

DAY 3

SURFACE WATER ISOTOPIC ACTIVITY (SMALL LAKES, PONDS, CREEKS, RESERVOIRS)

POST-PLUME DECAY TIME = 48.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	4.41E-03	3.01E-03	1.36E-03	8.57E-07	3.93E-07	1.80E-08	1.82E-08	9.05E-10	8.58E-10
B	2.40E-03	1.63E-03	7.39E-04	4.66E-07	2.14E-07	9.75E-09	9.87E-09	4.92E-10	4.66E-10
C	1.20E-03	8.15E-04	3.69E-04	2.33E-07	1.07E-07	4.87E-09	4.93E-09	2.45E-10	2.33E-10
D	5.31E-04	3.62E-04	1.64E-04	1.03E-07	4.74E-08	2.16E-09	2.19E-09	1.09E-10	1.03E-10
E	3.36E-04	2.29E-04	1.04E-04	6.53E-08	3.00E-08	1.37E-09	1.38E-09	6.90E-11	6.54E-11
F	2.35E-04	1.60E-04	7.24E-05	4.56E-08	2.09E-08	9.55E-10	9.67E-10	4.81E-11	4.57E-11
G	1.54E-04	1.05E-04	4.74E-05	2.98E-08	1.37E-08	6.25E-10	6.33E-10	3.15E-11	2.99E-11
H	1.04E-04	7.12E-05	3.22E-05	2.03E-08	9.32E-09	4.25E-10	4.31E-10	2.14E-11	2.03E-11
I	9.03E-05	6.16E-05	2.79E-05	1.76E-08	8.06E-09	3.68E-10	3.72E-10	1.85E-11	1.76E-11
J	2.45E-05	5.07E-05	2.30E-05	1.45E-08	6.64E-09	3.03E-10	3.06E-10	1.53E-11	1.45E-11
K	5.24E-06	4.33E-05	1.96E-05	1.24E-08	5.67E-09	2.59E-10	2.62E-10	1.30E-11	1.24E-11
L	4.39E-06	3.63E-05	1.64E-05	1.03E-08	4.75E-09	2.17E-10	2.19E-10	1.09E-11	1.04E-11
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.8-B

SURFACE WATER ISOTOPIC ACTIVITY (LARGE LAKES, RIVERS)

POST-PLUME DECAY TIME = 48.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	4.41E-05	3.01E-05	1.36E-05	8.57E-09	3.93E-09	1.80E-10	1.82E-10	9.05E-12	8.58E-12
B	2.40E-05	1.63E-05	7.39E-06	4.66E-09	2.14E-09	9.75E-11	9.87E-11	4.92E-12	4.66E-12
C	1.20E-05	8.15E-06	3.69E-06	2.33E-09	1.07E-09	4.87E-11	4.93E-11	2.45E-12	2.33E-12
D	5.31E-06	3.62E-06	1.64E-06	1.03E-09	4.74E-10	2.16E-11	2.19E-11	1.09E-12	1.03E-12
E	3.36E-06	2.29E-06	1.04E-06	6.53E-10	3.00E-10	1.37E-11	1.38E-11	6.90E-13	6.54E-13
F	2.35E-06	1.60E-06	7.24E-07	4.56E-10	2.09E-10	9.55E-12	9.67E-12	4.81E-13	4.57E-13
G	1.54E-06	1.05E-06	4.74E-07	2.98E-10	1.37E-10	6.25E-12	6.33E-12	3.15E-13	2.99E-13
H	1.04E-06	7.12E-07	3.22E-07	2.03E-10	9.32E-11	4.25E-12	4.31E-12	2.14E-13	2.03E-13
I	9.03E-07	6.16E-07	2.79E-07	1.76E-10	8.06E-11	3.68E-12	3.72E-12	1.85E-13	1.76E-13
J	2.45E-07	5.07E-07	2.30E-07	1.45E-10	6.64E-11	3.03E-12	3.06E-12	1.53E-13	1.45E-13
K	5.24E-08	4.33E-07	1.96E-07	1.24E-10	5.67E-11	2.59E-12	2.62E-12	1.30E-13	1.24E-13
L	4.39E-08	3.63E-07	1.64E-07	1.03E-10	4.75E-11	2.17E-12	2.19E-12	1.09E-13	1.04E-13
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND ACTIVITY = 1E-08 UCI/CC

2. FOR SMALL PUDDLES AND FALLOUT COLLECTORS, ASSUME 100 TIMES TABLE 10.8-A CONCENTRATIONS



SURFACE WATER

TABLE 10.8-A

DAY 6

SURFACE WATER ISOTOPIC ACTIVITY (SMALL LAKES, PONDS, CREEKS, RESERVOIRS)

POST-PLUME DECAY TIME = 120.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	2.44E-03	2.32E-03	1.16E-04	8.55E-07	3.93E-07	1.53E-08	1.37E-08	8.68E-10	8.58E-10
B	1.33E-03	1.26E-03	6.33E-05	4.64E-07	2.14E-07	8.29E-09	7.43E-09	4.72E-10	4.66E-10
C	6.62E-04	6.30E-04	3.16E-05	2.32E-07	1.07E-07	4.14E-09	3.71E-09	2.36E-10	2.33E-10
D	2.94E-04	2.80E-04	1.40E-05	1.03E-07	4.74E-08	1.84E-09	1.65E-09	1.04E-10	1.03E-10
E	1.86E-04	1.77E-04	8.88E-06	6.51E-08	3.00E-08	1.16E-09	1.04E-09	6.62E-11	6.54E-11
F	1.30E-04	1.24E-04	6.20E-06	4.55E-08	2.09E-08	8.12E-10	7.28E-10	4.62E-11	4.57E-11
G	8.50E-05	8.09E-05	4.06E-06	2.98E-08	1.37E-08	5.31E-10	4.76E-10	3.02E-11	2.99E-11
H	5.78E-05	5.50E-05	2.76E-06	2.03E-08	9.32E-09	3.62E-10	3.24E-10	2.06E-11	2.03E-11
I	5.00E-05	4.76E-05	2.39E-06	1.75E-08	8.06E-09	3.13E-10	2.80E-10	1.78E-11	1.76E-11
J	1.36E-05	3.92E-05	1.96E-06	1.44E-08	6.64E-09	2.57E-10	2.31E-10	1.46E-11	1.45E-11
K	2.90E-06	3.35E-05	1.68E-06	1.23E-08	5.67E-09	2.20E-10	1.97E-10	1.25E-11	1.24E-11
L	2.43E-06	2.80E-05	1.41E-06	1.03E-08	4.75E-09	1.84E-10	1.65E-10	1.05E-11	1.04E-11
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.8-B

SURFACE WATER ISOTOPIC ACTIVITY (LARGE LAKES, RIVERS)

POST-PLUME DECAY TIME = 120.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	2.44E-05	2.32E-05	1.16E-06	8.55E-09	3.93E-09	1.53E-10	1.37E-10	8.68E-12	8.58E-12
B	1.33E-05	1.26E-05	6.33E-07	4.64E-09	2.14E-09	8.29E-11	7.43E-11	4.72E-12	4.66E-12
C	6.62E-06	6.30E-06	3.16E-07	2.32E-09	1.07E-09	4.14E-11	3.71E-11	2.36E-12	2.33E-12
D	2.94E-06	2.80E-06	1.40E-07	1.03E-09	4.74E-10	1.84E-11	1.65E-11	1.04E-12	1.03E-12
E	1.86E-06	1.77E-06	8.88E-08	6.51E-10	3.00E-10	1.16E-11	1.04E-11	6.62E-13	6.54E-13
F	1.30E-06	1.24E-06	6.20E-08	4.55E-10	2.09E-10	8.12E-12	7.28E-12	4.62E-13	4.57E-13
G	8.50E-07	8.09E-07	4.06E-08	2.98E-10	1.37E-10	5.31E-12	4.76E-12	3.02E-13	2.99E-13
H	5.78E-07	5.50E-07	2.76E-08	2.03E-10	9.32E-11	3.62E-12	3.24E-12	2.06E-13	2.03E-13
I	5.00E-07	4.76E-07	2.39E-08	1.75E-10	8.06E-11	3.13E-12	2.80E-12	1.78E-13	1.76E-13
J	1.36E-07	3.92E-07	1.96E-08	1.44E-10	6.64E-11	2.57E-12	2.31E-12	1.46E-13	1.45E-13
K	2.90E-08	3.35E-07	1.68E-08	1.23E-10	5.67E-11	2.20E-12	1.97E-12	1.25E-13	1.24E-13
L	2.43E-08	2.80E-07	1.41E-08	1.03E-10	4.75E-11	1.84E-12	1.65E-12	1.05E-13	1.04E-13
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND ACTIVITY = 1E-08 UCI/CC



SURFACE WATER

DAY 21

TABLE 10.8-A

SURFACE WATER ISOTOPIC ACTIVITY
(SMALL LAKES, PONDS, CREEKS, RESERVOIRS)

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	6.40E-04	6.39E-04	5.36E-10	8.43E-07	3.93E-07	6.77E-09	2.64E-09	7.06E-10	8.57E-10
B	3.48E-04	3.47E-04	2.91E-10	4.58E-07	2.14E-07	3.68E-09	1.43E-09	3.84E-10	4.66E-10
C	1.74E-04	1.73E-04	1.45E-10	2.29E-07	1.07E-07	1.84E-09	7.16E-10	1.92E-10	2.33E-10
D	7.71E-05	7.69E-05	6.45E-11	1.01E-07	4.73E-08	8.15E-10	3.18E-10	8.50E-11	1.03E-10
E	4.88E-05	4.87E-05	4.08E-11	6.43E-08	3.00E-08	5.16E-10	2.01E-10	5.38E-11	6.54E-11
F	3.41E-05	3.40E-05	2.85E-11	4.49E-08	2.09E-08	3.60E-10	1.40E-10	3.76E-11	4.56E-11
G	2.23E-05	2.23E-05	1.87E-11	2.94E-08	1.37E-08	2.36E-10	9.19E-11	2.46E-11	2.99E-11
H	1.52E-05	1.51E-05	1.27E-11	2.00E-08	9.31E-09	1.60E-10	6.25E-11	1.67E-11	2.03E-11
I	1.31E-05	1.31E-05	1.10E-11	1.73E-08	8.05E-09	1.39E-10	5.41E-11	1.45E-11	1.76E-11
J	3.57E-06	1.08E-05	9.04E-12	1.42E-08	6.63E-09	1.14E-10	4.45E-11	1.19E-11	1.45E-11
K	7.62E-07	9.21E-06	7.72E-12	1.22E-08	5.67E-09	9.76E-11	3.80E-11	1.02E-11	1.24E-11
L	6.38E-07	7.72E-06	6.47E-12	1.02E-08	4.75E-09	8.17E-11	3.19E-11	8.53E-12	1.04E-11
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

TABLE 10.8-B

SURFACE WATER ISOTOPIC ACTIVITY
(LARGE LAKES, RIVERS)

POST-PLUME DECAY TIME =

480.0 HOURS

ZONE	TOTAL SAMPLE UCI/CC	I-131 UCI/CC	I-133 UCI/CC	CS-134 UCI/CC	CS-137 UCI/CC	BA-140 UCI/CC	LA-140 UCI/CC	SR-89 UCI/CC	SR-90 UCI/CC
A	6.40E-06	6.39E-06	5.36E-12	8.43E-09	3.93E-09	6.77E-11	2.64E-11	7.06E-12	8.57E-12
B	3.48E-06	3.47E-06	2.91E-12	4.58E-09	2.14E-09	3.68E-11	1.43E-11	3.84E-12	4.66E-12
C	1.74E-06	1.73E-06	1.45E-12	2.29E-09	1.07E-09	1.84E-11	7.16E-12	1.92E-12	2.33E-12
D	7.71E-07	7.69E-07	6.45E-13	1.01E-09	4.73E-10	8.15E-12	3.18E-12	8.50E-13	1.03E-12
E	4.88E-07	4.87E-07	4.08E-13	6.43E-10	3.00E-10	5.16E-12	2.01E-12	5.38E-13	6.54E-13
F	3.41E-07	3.40E-07	2.85E-13	4.49E-10	2.09E-10	3.60E-12	1.40E-12	3.76E-13	4.56E-13
G	2.23E-07	2.23E-07	1.87E-13	2.94E-10	1.37E-10	2.36E-12	9.19E-13	2.46E-13	2.99E-13
H	1.52E-07	1.51E-07	1.27E-13	2.00E-10	9.31E-11	1.60E-12	6.25E-13	1.67E-13	2.03E-13
I	1.31E-07	1.31E-07	1.10E-13	1.73E-10	8.05E-11	1.39E-12	5.41E-13	1.45E-13	1.76E-13
J	3.57E-08	1.08E-07	9.04E-14	1.42E-10	6.63E-11	1.14E-12	4.45E-13	1.19E-13	1.45E-13
K	7.62E-09	9.21E-08	7.72E-14	1.22E-10	5.67E-11	9.76E-13	3.80E-13	1.02E-13	1.24E-13
L	6.38E-09	7.72E-08	6.47E-14	1.02E-10	4.75E-11	8.17E-13	3.19E-13	8.53E-14	1.04E-13
M	1.00E-08	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD	L.T. LLD

NOTES: 1. BACKGROUND ACTIVITY = 1E-08 UCI/CC

SWIPES, PERSONNEL & EQUIPMENT CONTAMINATION

DAY 2
(0500-1100 HR)
(1101-1700 HR)

TABLE 10.9

POST-PLUME RADIOLOGICAL SURVEY/SAMPLING DATA
(FOR END WINDOW AND PANCAKE PROBES)

POST-PLUME DECAY TIME = 24.0 HOURS

ZONE	CONTAMINATION ON SWIPES, OR TRANSFERRED TO PERSONNEL OR EQUIPMENT (DPM/100 CM2)	END WINDOW PROBE (CPM) *	PANCAKE PROBE (CPM) *
		@ 1 CM	@ 1 CM
A	7.63E+04	3.05E+03	7.6E+03
B	4.14E+04	1.66E+03	4.1E+03
C	2.07E+04	8.28E+02	2.1E+03
D	9.18E+03	3.67E+02	9.2E+02
E	5.81E+03	2.33E+02	5.8E+02
F	4.06E+03	1.62E+02	4.1E+02
G	2.66E+03	1.06E+02	2.7E+02
H	1.81E+03	7.23E+01	1.8E+02
I	1.56E+03	6.25E+01	1.6E+02
J	1.29E+03	5.15E+01	1.3E+02
K	1.10E+03	4.40E+01	1.1E+02
L	9.21E+02	3.68E+01	9.2E+01
M	L.T. LLD	2.00E+01	3.0E+01

NOTE: THE ABOVE SURVEY INSTRUMENT COUNT RATES REFLECT READINGS TAKEN ON SWIPES, OR ON PERSONNEL CLOTHING, SKIN SURFACES OR EQUIPMENT THAT HAS BECOME CONTAMINATED WHILE PERFORMING FIELD ACTIVITIES.



SECTION 11.0

DESCRIPTION OF SCENARIO ASSUMPTIONS

11.0 Description of Scenario Assumptions

1. Offsite Radiological Survey and Environmental Sampling Data

A. Source Term

The radiological source term assumed for this scenario was selected to include sufficient radioiodine to achieve offsite deposition levels which exceed derived FDA Preventive and Emergency Protective Action Guides (PAG's) for soil, pasture grass and cow's milk. The Emergency PAG's for the milk pathway are exceeded out to approximately 12 miles downwind from the Ginna Plant. The Preventive PAG's for the milk pathway are exceeded out to approximately 30 miles downwind. Deposition radioactivity diminishes to background levels at or beyond 50 miles from the plant.

In addition, the postulated reactor accident is assumed to result in the release of particulates which also will ultimately enter various food and water pathways.

Immediate protective action recommendations (e.g., sheltering, evacuation) may not be necessarily based upon projected child thyroid dose, due to the predominance of release noble gas quantities. (SEE FIGURE 9.1). The noble gas-to-radioiodine ratio assumed in this scenario is approximately 3300:1.

The downwind integrated doses from the 1.25-hour scenario release are as follows:

Whole Body Dose (at 5 miles) = 1.28 REM

Child Thyroid Dose (at 5 miles) = 0.48 REM

B. Ground Deposition

Downwind ground deposition (soil) levels were computed assuming a deposition velocity of 0.01 (m/sec) for radioiodines and 0.001 (m/sec) for particulates.

Ground deposition areal concentrations ($\mu\text{Ci}/\text{m}^2$) were determined as follows:

$$C_g = [(Q)(X_u/Q)(V_d)(1/\lambda)(1 - \exp(-\lambda t))(1E+6)]$$

Where:

C_g = Iodine or particulate radionuclide ground deposition at a given location, in ($\mu\text{Ci}/\text{m}^2$),

Q = Iodine or particulate radionuclide release rate, in Ci/sec ,

X_u/Q = Atmospheric dispersion coefficient for the downwind location of interest, in $\text{sec} \cdot \text{mph}/\text{m}^3$,

u = Average wind speed, in mph,

V_d = Deposition velocity, in m/sec ,

λ = Radiological decay constant for radionuclide of interest, in hours^{-1} ,

t = Duration of release, in hours.

Conversion factors were developed to determine soil radionuclide concentrations ($\mu\text{Ci}/\text{kilogram}$) based upon soil density and depth of sampling. A density of $2160 \text{ Kg}/\text{m}^3$ (=carbon) was assumed for soil, and conversion factors were computed for sampling depths of 1 cm, 2.5 cm and 5 cm. The conversions are as follows:

1 cm sampling depth : ($\mu\text{Ci}/\text{Kg}$) = ($\mu\text{Ci}/\text{m}^2$) / 20

2.5 cm sampling depth : ($\mu\text{Ci}/\text{Kg}$) = ($\mu\text{Ci}/\text{m}^2$) / 50

5.0 cm sampling depth : ($\mu\text{Ci}/\text{Kg}$) = ($\mu\text{Ci}/\text{m}^2$) / 100



C. Survey Instrument Readings from Ground Deposition

Micro-R/Hr Instruments:

Micro-R/hr meter readings were developed for ground deposition surveys conducted at 1 cm and 1 m from the ground surface. Dose factors calculated by Kocher (1983) for ground deposition of radionuclides were used in computing the gamma dose rates at 1 meter above the ground. The PC shielding program MICROSIELD was utilized for calculating the gamma dose rates at 1 cm above an infinite plane. The ratio of the 1-cm to 1-meter gamma dose rates was determined to be approximately 1.7.

Count Rate Instruments:

End window and Pancake probe count rate readings were developed for surveys taken at 1 cm and 1 m from the ground surface. Gamma contributions to 1-m count rates were determined by converting the above gamma dose rates to count rates using appropriate instrument gamma sensitivities, i.e., 2200 cpm/mr/hr (HP-190 probe) and 3600 cpm/mr/hr (HP-210/260 pancake probe). Count rates determined for 1 m above the ground were assumed to have negligible beta contribution.

Ground survey count rates measured at 1 cm were based upon factors presented in IAEA Report 152 and WINCO-1012 (1984) for GM survey instrument response to fresh radioiodine and other fission product deposition (i.e., 0.3 uCi/m² per 100 cpm). Since this value is based upon a 30 mg/cm² probe window thickness, adjusted factors were assumed for the 2-mg/cm² window thickness of both the HP-190 end window and HP-210/260 pancake probes. The adjusted factors assumed are:

HP-190: .25 uCi/m² per 100 cpm, (400 cpm/uCi/m²)

HP-210/260: .10 uCi/m² per 100 cpm, (1000 cpm/uCi/m²)

D. Animal Forage and Milk

Forage and peak milk activities were determined based upon soil/pasture/milk concentration ratios found in FDA derived response level tables.

Decay of radionuclide concentrations in pasture grass, hay and silage included an assumed 14-day weathering half-life in addition to the radiological half-life.

