EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

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EPIP TITLE LISTING

EMERGENCY PLAN IMPLEMENTING PROCEDURES

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JCP&L / GPU

Jersey Central
Power & Light Company

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Date Issued 02/19/81	Effective Date (12/06/82) 12/16/82
Revision No. 2	Date 11/02/82
Authorized By Director-Station Operations	

Subject: Personnel Injury

Approval/Concurrence: B B Snidler

Project:
Oyster Creek Nuclear Generating Station

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1.0 PURPOSE:

This procedure provides the instructions necessary to assure prompt medical care is provided injured persons with contaminated minor or major injuries. Additionally, it provides guidance regarding the handling of contaminated or non-contaminated injured personnel and the methods used to prevent the unnecessary spread of contamination to areas such as an ambulance interior or a hospital.

2.0 ACTION LEVEL REFERENCES

2.1 EPIP-2, Unusual Event

2.2 EPIP-3, Alert

2.3 EPIP-4, Site Emergency

2.4 EPIP-5, General Emergency

3.0 RESPONSIBILITIES

3.1 The Emergency Director is responsible to ensure that injured persons receive medical treatment and if necessary transport to a medical facility. When the Operations Support Center is activated, the Operations Support Coordinator will normally be the designee for this procedure.

3.2 The Emergency Director or his designee shall insure that the attached check list is completed and the information contained on the list is communicated to the appropriate agencies.

3.3 The Emergency Director and/or the responsible physician will notify Radiation Management Corporation if he determines that the contaminated, injured situation exceeds the handling capability of the plant or supporting hospital (Community Memorial Hospital).

4.0 PREREQUISITES

4.1 Wear proper protective clothing as directed by Radiological Controls.

4.2 Use proper respiratory protective devices as directed by Radiological Controls.

4.3 Wear proper dosimetry as directed by Radiological Controls.

4.4 Radiation exposure to individuals exceeding 10 CFR 20 limits is restricted as follows:

EMERGENCY EXPOSURE LIMITS

ORGAN	PROTECTIVE OR CORRECTIVE ACTIONS	LIFE SAVING ACTIONS
Whole Body	25 Rem	75 Rem
Extremities	100 Rem	300 Rem
Thyroid	125 Rem	No limit

4.5 Women capable of reproduction should not take part in actions requiring emergency exposure.

4.6 Emergency exposures for volunteers must be authorized by the Emergency Director. This responsibility may not be delegated.

4.7 All exposures will be maintained ALARA.

5.0 REQUIREMENTS

5.1 Initiating Conditions

Personnel injury may occur in any class of emergency (i.e., Unusual Event, Alert, Site Emergency, or General Emergency). The offsite transport of a contaminated or potentially contaminated injured person is an emergency action level that should initiate the Unusual Event class. A contaminated injured person provided medical care at Oyster Creek Nuclear Generating Station and not transported to an offsite medical facility does not initiate an Unusual Event classification.

5.2 Immediate Notifications

5.2.1 Immediately upon being aware that an injury has occurred, the injured (if the wound is minor), or someone else in the area, shall contact the Control Room and report the occurrence.

5.3 Evaluation of Injury

5.3.1 The Emergency Director or his designee will dispatch a member of the plant shift trained in first aid and a qualified Radiological Controls Technician to the injured person's location.

5.3.2 Based upon the First Aid Team observations of the injury, the Emergency Director or his designee will declare the injury to be a Minor injury (treatable on site) or a Major injury (transportable).

5.3.3 If the injury occurred in a Radiation Work Permit area and appears to be minor in extent, the injured person should leave the area or be removed, as appropriate. Remove any protective clothing worn and frisk prior (as soon as possible) to departing the Radiation Work Permit area.

5.3.4 If the injury is judged to be a minor injury with contamination, the Emergency Director or his designee shall give instructions for the injured to be escorted to the plant personnel decontamination area.

5.3.5 If the injury is judged to be a Minor injury (treatable on site), proceed in accordance with paragraph 5.4 of this procedure.

5.3.6 If the injury is judged to be a Major injury (transferable), further disposition shall proceed in accordance with paragraph 5.5 of this procedure.

5.4 Minor Injury

5.4.1 If the injury is an open wound, proceed as follows: [If the injury is not an open wound (such as, a shallow cut or puncture), proceed to paragraph 5.5.2 of this procedure.]

5.4.1.1 Decontamination of open wounds shall be performed in the presence of medical personnel. Cover the wound and decontaminate the surrounding area with Betadine Scrub.

5.4.1.2 Uncover the wound and flush the wound using sterile water (if available) for at least two minutes in the Monitor & Change Room sink.

5.4.1.3 If a specific object caused the wound, the object should be surveyed for contamination by Radiological Controls.

5.4.1.4 After the wound has been flushed, carefully blot dry the wound and surrounding skin area using sterile, absorbent material.

5.4.1.5 Survey the wound and the surrounding skin area using a thin window GM detector (such as the HP-210).

5.4.1.6 If contamination levels in or around the wound do not exceed 100 cpm above background, administer necessary first aid to treat the wound.

5.4.1.7 If contamination levels in or around the wound exceed 100 cpm above background, proceed as follows:

- o Use betadine scrub.
- o Dip a cotton swab in the betadine scrub and rub a small area of the skin immediately surrounding the wound, using a motion which starts by placing the cotton swab at the edge of the wound and then moves away from the wound (do not rub towards the wound). Use as many swabs as necessary to clean an area 1-1/2" wide around the wound.
- o Moisten a swab in sterile water if available, and rinse the detergent from the skin surrounding the wound, using the same motion as that used for applying the betadine scrub. Use as many swabs as necessary until the skin is completely rinsed.
- o Blot the skin dry using sterile, absorbent material.

5.4.1.8 Survey the wound and surrounding area using a thin window GM detector. If contamination levels in or around the wound do not exceed 100 cpm above background, administer necessary first aid to treat the wound.

5.4.1.9 Document on a Personnel Contamination Report form any decontamination performed. (Form No. 1556R)

5.4.1.10 After reasonable decontamination attempts are unsuccessful and the injury requires medical evacuation, the Emergency Director may authorize offsite transport of the contaminated injured person. The Emergency Director or his designee will notify Community Memorial Hospital, Telephone (201) 349-8000, that a person with a contaminated minor injury is being transported to the hospital.

5.4.1.11 The Emergency Director or his designee shall make the necessary arrangements for transportation.

5.4.1.12 The Emergency Director or his designee will assign a qualified Radiological Controls Technician to accompany injured persons transported to offsite medical facilities. The escort will perform duties listed in paragraph 5.6 of this procedure.

5.4.2 If the injury is <u>not</u> an open wound, proceed as follows:

5.4.2.1 Perform a complete body survey using a thin window GM detector.

5.4.2.2 If contamination levels on the skin in the area of the injury and on the remainder of the body do not exceed 100 cpm above background, administer necessary first aid to treat the injury.

5.4.2.3 If contamination levels on the skin in the area of the injury and/or on the remainder of the body exceed 100 cpm above background, decontaminate in accordance with EPIP-21. Document the decontamination on a Personnel Contamination Report Form. (Form No. 1556R)

5.4.2.4 If the skin in the area of the injury is contaminated and if decontamination is successful, administer necessary first aid to treat the injury.

5.4.2.5 If the skin in the area of the injury is contaminated and if decontamination is unsuccessful, notify the Emergency Director or his designee.

5.4.2.6 After reasonable decontamination attempts are unsuccessful and the injury requires medical evacuation, the Emergency Director may authorize offsite transport of the contaminated injured person. The Emergency Director or his designee will notify Community Memorial Hospital, Telephone (201) 349-8000, that a person with a contaminated minor injury is being transported to the hospital.

5.4.2.7 The Emergency Director or his designee shall make the necessary arrangements for transporation.

5.4.2.8 The Emergency Director or his designee will assign a qualified Radiological Controls Technician to accompany injured persons transported to offsite medical facilities. The escort will perform duties listed in paragraph 5.6 of this procedure.

5.5 Major Injury

5.5.1 The Emergency Director or his designee shall notify first aid and rescue personnel:

5.5.1.1 Notify the Lacey First Aid Squad, Telephone (609) 693-6636 to arrange for transportation.

5.5.1.2 On-Site Medical Department [redacted] or [redacted]

5.5.1.3 Site Protection Sergeant [redacted] or [redacted]

5.5.1.4 Shift Radiological Controls Technician 4660 or 4662

5.5.2 Upon arrival at the scene, the First Aid Team leader or designee will establish communications with the Emergency Director and apprise him of the nature and severity of the injury.

5.5.3 The First Aid Team will administer first aid to the injured person in accordance with established medical practices.

5.5.4 If the injured is located in a radiological control area and the person's condition permits, move the injured (a stretcher may be required) to minimize radiation exposure and/or contamination to the injured and First Aid Team members. When making decisions concerning the disposition of the injured, the injured's well-being and need for medical attention shall always take precedence over decontamination efforts.

5.5.5 Survey the injured person for contamination. (If the injured person is wearing protective clothing and his condition permits, remove the clothing prior to performing this survey). Do not delay transport in order to perform survey or decontamination.

5.5.6 If contamination levels on the injured person exceed 100 cpm (using a thin window GM detector), proceed as follows:

- The Emergency Director or his designee shall notify Community Memorial Hospital, Telephone (201) 349-8000, that a person with a contaminated injury is being transported to the hospital (describe the injury).

- o Notify the Security Department (Telephone [redacted] that an ambulance is enroute to the plant. When it arrives, permit entry of the ambulance and attendants and escort it to the building entry closest to the injured person. Issue dosimetry in accordance with Procedure 906.6.
- o The Emergency Director or designee will assign a qualified Radiological Controls Technician to accompany injured persons transported to offsite medical facilities. The escort will perform duties listed in paragraph 5.6 of this procedure.

5.5.7 If contamination levels are less than 100 cpm proceed as follows:

5.5.7.1 The Emergency Director or his designee shall notify the Community Memorial Hospital, Telephone, (201) 349-8000, that a person with a major injury is being transported to the hospital (describe the injury).

5.5.7.2 Notify the Security Department that an ambulance is enroute to the plant. When it arrives, permit immediate entry of the ambulance and attendants, and escort it to the building entry closest to the injured person. Issue dosimetry in accordance with Procedure 906.6.

5.5.7.3 The Emergency Director or designee will assign a qualified Radiological Controls Technician to accompany injured persons transported to offsite medical facilities. The escort will perform duties listed in paragraph 5.6 of this procedure.

5.6 Offsite Medical Escort Responsibilities

5.6.1 The Escort assigned by the Emergency Director or designee to ride in the ambulance is responsible (do not delay transport to accomplish these items) to:

5.6.1.1 Issue each ambulance attendant protective clothing (as appropriate).

5.6.1.2 Take steps (as appropriate) to protect the ambulance interior from contamination (such as by the use of plastic sheeting).

5.6.1.3 If appropriate, check the hospital to ensure that proper steps have been taken to minimize the potential for contamination of the hospital, such as paper on the floor, etc.

5.6.1.4 Issue a TLD and a dosimeter to each medical person who will be near the injured (if 300 mRem exposure is likely to be received). (Plant Procedure 906.6)

5.6.1.5 Survey the ambulance attendants and the vehicle interior for contamination.

- o If contamination on the attendants is detected in excess of 100 cpm above background, decontamination should be performed at the hospital. If the attendants are not contaminated, or after decontamination, collect all TLD's and dosimeters from the attendants, obtain the necessary data for the TLD Issue Sheet and release the attendants. Document the results of the contamination survey.
- o If contamination inside the ambulance is detected in excess of 100 cpm above background and it cannot be decontaminated at that location, contact the Radiation Protection Coordinator [redacted] for assistance. If the ambulance is not contaminated, or after decontamination, release it. Document the results of the contamination survey.

5.6.1.6 Survey the hospital receiving and treatment areas. If contamination in any of these areas is detected in excess of 100 cpm above background, decontaminate the areas. Document the results of the contamination survey before and after decontamination.

5.6.1.7 Collect any protective clothing used and any potentially contaminated materials and transport them back to the plant.

5.6.1.8 Record the results of each survey performed and deliver a copy to the Emergency Director.

5.6.1.9 Recover victim's dosimetry for evaluation.

Form 7-1

DOCUMENTATION CHECKLIST

TIME/INITIALS

____/____ Injured person report received.

____/____ Shift member (trained in first aid) and Radiological Control Technician dispatched to injured person's location.

____/____ On site medical department notified
Telephone [redacted] or [redacted]

____/____ RMC notified.

____/____ Offsite assistance requested (as required)

____/____ o Lacey First Aid Squad notified
Telephone (609) 693-6636

Notify Oyster Creek Nuclear Generating Station Security Department if offsite medical assistance has been requested.
____/____ Telephone [redacted] or [redacted]

____/____ o Community Memorial Hospital notified, Telephone (201) 349-8000, and provided with the following information:

INJURY

Major	_____	Minor	_____
Life Threatening	_____	Non-Life Threatening	_____
Contaminated	_____	Non-Contaminated	_____
High Level Radiation	_____	Low Level Radiation	_____
Number of Patients	_____		
RMC Notified	_____	RMC Not Notified	_____

Transportation Used: _____

ETA: _____

Patient's Name/Title: _____

Who is with patient: _____

Title: _____

Description of Injury: _____

_____

_____

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Procedure No. EPIP-9	Page 1 Of 13
Date Issued 2/23/81	Effective Date (12/17/82) 12/27/82
Revision No. 2	Date 11/2/82
Authorized By Director-Station Operations	

Subject: Offsite Dose Projections

Approval/Concurrence

Project: Oyster Creek Nuclear Generating Station

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1.0 PURPOSE

The purpose of this procedure is to provide:

1.1 Techniques and methods for calculating projected doses (whole body and child thyroid) which might result from airborne releases of radioactive materials from OCNGS.

1.2 Documentation and accountability, if 10 CFR 20, Appendix B, Table II, Column 2 concentrations for liquid effluents have been exceeded in the discharge canal initiating an Unusual Event emergency classification.

2.0 REFERENCES

2.1 EPIP-2 Unusual Event

2.2 EPIP-3 Alert

2.3 EPIP-4 Site Emergency

2.4 EPIP-5 General Emergency

3.0 RESPONSIBILITIES

3.1 The Shift Radiological Controls Technician will be responsible for implementation of this procedure until activation of the Environmental Assessment Command Center.

4.0 PREREQUISITES

4.1 None

5.0 REQUIREMENTS

5.1 Airborne Releases

5.1.1 Obtain meteorological parameters from Control Room instrumentation located on the right of Panel 13R. Update meteorology approximately every fifteen minutes.

NOTE: Offsite organizations for meteorological data are:

Department of the Air Force	Department of the Navy
609-724-3568/3994	201-323-2334

5.1.1.1 Obtain wind direction (°) from chart recorder and record on Form EPIP 9-1 (wind is from this direction).

5.1.1.2 Calculate converted downwind value by the following equations and record on Form EPIP 9-1.

5.1.1.2.1 If wind direction value from 5.1.1.1 is between 0° - 180°, then:
(wind direction (°) + 180°) =
converted downwind value (°)

5.1.1.2.2 If wind direction value from 5.1.1.1 is between 181° - 360°, then:
(wind direction (°) - 180°) =
converted downwind value (°)

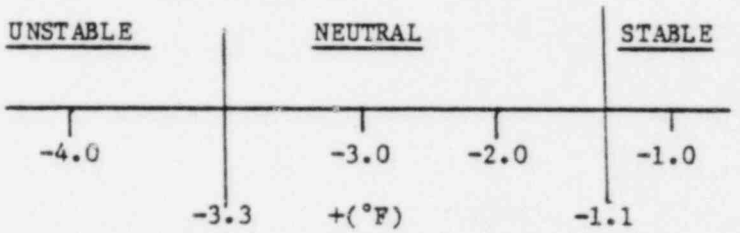
5.1.1.3 Determine affected sector based on converted downwind direction using the following table:

Converted Downwind Direction (°)	Affected Sector Compass Point
349 to 0, 0 to 11	N
11 to 34	NNE
34 to 56	NE
56 to 79	ENE
79 to 101	E
101 to 124	ESE
124 to 146	SE
146 to 169	SSE
169 to 191	S
191 to 214	SSW
214 to 237	SW
237 to 259	WSW
259 to 281	W
281 to 304	WNW
304 to 326	NW
326 to 349	NNW

Record affected sector (compass point) on Form EPIP 9-1 and Form EPIP 9-4.

5.1.1.4 Obtain Δt (temperature differential) between 380 ft. and 33 ft. elevation of meteorological tower and record on Attachment 1.

5.1.1.5 Determine stability class from Δ t(°), referencing the following graph and constraints:



- If Δt is between (-3.3°F and -1.1°F) condition is NEUTRAL.
- If Δt is < (-3.3°F) condition is UNSTABLE.
- If Δt is > (-1.1°F) condition is STABLE.

Record stability class on Form EPIP 9-1 and Form EPIP 9-4. Also, record on Form EPIP 9-2 for design basis accident dose projection, if applicable.

5.1.1.6 Obtain wind speed in mph. Calculate windspeed in m/sec.

$$\text{mph} \times 0.45 \frac{\text{m/sec}}{\text{mph}} = \text{m/sec.}$$

Record results on Form EPIP 9-1 and Form EPIP 9-4. Also, record on Form EPIP 9-2 for design basis accident dose projection, if applicable. Communicate windspeed (mph), converted downwind value, stability class and affected sector to the Emergency Director.

5.2. Design Basis Accidents - Initial Dose Assessment.

5.2.1. The following are FDSAR referenced design basis accidents:

- Refueling accident
- Control rod drop accident
- Loss of coolant inside drywell
- Steam line break outside reactor building

Upon assessment of a design basis accident by the Emergency Director, utilize Form EPIP 9-2, "Postulated Offsite Doses from Design Basis Accidents". Determine dose in REM for the current stability class and windspeed as determined from Page 1, Form EPIP 9-2, for Design Basis Accidents.

$$\text{Basis Dose (Rem)} = \frac{\text{Dose (Rem) for 2 hour release}}{\text{Windspeed (m/sec)}}$$

5.2.2 Record results on Form EPIP 9-2, Page 2 and communicate to Emergency Director.

5.2.3 Perform further dose projections utilizing Sections 5.3 through 5.6.

5.3 Determine the source strength for an elevated release. Record data and results on Form EPIP 9-3.

5.3.1 Obtain stack gas monitor value from Panel 10F, Channel A or B in counts/sec.

NOTE: If stack gas monitor is offscale, notify Radiation Controls to dispatch a technician to the downwind 0.25 mile location to obtain dose rate. Proceed to Section 5.7 to project source strength from dose rate.

5.3.2 On Form EPIP 9-3, circle each ventilation system that is operating (as verified by red light indication on Panel 11R) and sum to obtain total stack flow.

NOTE: "New" Radwaste ventilation flow can be verified by contacting the New Radwaste Control Room.

5.3.3 Obtain conversion factor for uCi/sec per count/sec in Channel A or B from Panel 10F.

NOTE: Use same Channel (A and B) for conversion factor utilized for stack gas monitor value.

5.3.4 Determine the stack correction factor from the Graph on Panel 10F as a function of total stack flow.

5.3.5 Calculate the source strength in ci/sec based on the formula:

$$\frac{(\text{Stack Monitor counts/sec})\ (\text{Conversion Factor } \frac{\text{uCi/sec}}{\text{count/sec}})\ (1.0\text{E-}06\ \frac{\text{Ci}}{\text{uCi}})}{(\text{Stack Correction Factor})} = \frac{\text{Ci}}{\text{sec}}$$

5.4 Determine the source strength for a ground release. Record data and results on Form EPIP 9-3.

5.4.1 Calculate source strength based on the formula:

Air Sample Activity X Release Rate X

Conversion Factor = Source Strength

$$\frac{uCi}{cc} \times \frac{ft^3}{min} \times 4.72E-04 = Ci/sec$$

where: uCi/cc = Air concentration in source of release as determined by Radiation Controls Dept.

ft^3/min = Release Rate as assessed by the Emergency Director or his designee

$$4.72E-04 = 2.832E+04 \frac{cc}{ft^3} \times \frac{1\ min}{60\ sec} \times 1.0E-06 \frac{Ci}{uci}$$

NOTE: If air concentration and/or release rate are unavailable, notify Radiation Controls to dispatch a technician to the downwind 0.25 mile location to obtain dose rate. Proceed to Section 5.7 to project source strength from dose rate.

5.5 Project offsite dose rate from source strength data. Record data and results on Form EPIP 9-4.

5.5.1 Record type of release - 'E' for elevated (stack release), 'G' for ground.

5.5.2 Enter '1' in "source strength method" column to indicate that source strength was determined from plant parameters.

5.5.3 Calculate whole body dose rate. Initially, project dose rate at 0.25, 2, 5, and 10 miles downwind based on the formula:

$$\text{Dilution Factor} \times \frac{1}{\text{windspeed}} \times \text{Source Strength} \times \text{Dose Factor} = \text{Dose Rate}$$

$$\frac{Xu}{Q}\ (m^{-2}) \times \frac{1}{u}\ (m/sec)^{-1} \times \frac{Ci}{sec} \times \frac{mRem/hr}{Ci/m^3} = \frac{mRem}{hr}$$

where: $\frac{Xu}{Q}$ = Atmospheric Dilution Factor from Attachment 1 based on type of release, stability class, and downwind distance.

$\frac{1}{u}$ = Inverse of windspeed in $(meters/sec)^{-1}$. Windspeed obtained from Form EPIP 9-1.

$\frac{Ci}{sec}$ = Source Strength determined on Form EPIP 9-3.

$\frac{mRem/hr}{Ci/m^3}$ = Whole Body Dose Factor from Attachment 2 as a function of time after shutdown. Obtain time after shutdown from Emergency Director or his designee.

5.5.4 Project integrated whole body dose from the formula:

Dose rate X estimated duration of release = integrated dose

$$\frac{mRem}{hr} \times hr = mRem$$

where: $\frac{mRem}{hr}$ = whole body dose rate at downwind distance

hr = duration of release as estimated by the Emergency Director or his designee. default value = two hours.

5.5.5 Obtain integrated child thyroid dose by referencing Attachment 3, comparing whole body dose rate to projected exposure time (default value = two hours). Calculate child thyroid dose rate by dividing integrated child thyroid dose by projected exposure time to obtain Rem/hr.

5.5.6 Calculate "time to reach PAG" (Protective Action Guides-EPA-520) for whole body dose rate and child thyroid dose rate by the formulae:

Whole body "time to reach PAG" (hr.) = 1000 mRem/whole body dose rate (mRem/hr)

Child thyroid "time to reach PAG" (hr.) = 5 Rem/Child thyroid dose rate (Rem/hr)

5.5.7 Once all data and calculations are recorded on Form EPIP 9-4, communicate results to Emergency Director. Provide the noble gas release rate (Ci/sec), estimated duration of release (hr.), whole body dose rate (mRem/hr) and integrated dose (mRem), child thyroid integrated dose (rem) and iodine concentration (uCi/cc) for site boundary (0.25 mile), 2 mile, 5 mile, and 10 mile downwind locations.

5.6 If applicable, calculate integrated whole body dose and child thyroid dose from offsite monitoring data on Form EPIP 9-5.

5.6.1 Obtain dose rate net counts per minutes (NCPM) and scaler efficiency from monitoring team. Calculate air concentration in uCi/cc by the formula:

$$\frac{uCi}{cc} = \frac{NCPM \times 7.5E\text{-}11}{\% \text{ Efficiency}}$$

where: $7.5E\text{-}11 = \frac{4.5E\text{-}07 \text{ uCi/dpm} \times 100\ \%}{6.0E + 5 \quad cc}$

5.6.2 Record monitoring location and azimuth - distance (degrees - miles) as determined from EPIP-11, Attachment 1.

5.6.3 Compare air concentration to projected exposure time on Attachment 3 to obtain child thyroid dose.

5.6.4 Calculate integrated whole body exposure by multiplying dose rate by projected exposure time (hr.).

5.6.5 Once all data and calculations are completed, communicate results to Emergency Director.

5.7 Project source strength from offsite monitoring dose rate data utilizing Form EPIP 9-4.

5.7.1 Enter '2' in source strength method column to indicate that source strength was determined from offsite dose rate.

5.7.2 Enter type of release -'E' for elevated (stack release), 'G' for ground.

5.7.3 Enter monitoring location downwind distance in miles.

5.7.4 Calculate source strength based on the formula:

$$\frac{\text{dose rate} \times \text{windspeed}}{\text{dose factor} \times \text{dilution factor}} = \text{source strength}$$

$$\frac{\frac{\text{mRem/hr}}{\text{Ci/m}^3} \times \text{u (meter/sec)}}{\text{mRem/hr} \times \frac{\text{Xu}}{\text{Q}}\ (\text{m}^{-2})} = \frac{\text{Ci}}{\text{sec}}$$

where : $\frac{\text{mRem}}{\text{hr}}$ = whole body dose rate at downwind distance from Form EPIP 9-5.

u = windspeed in meter/sec from Form EPIP 9-1.

$\frac{\text{mRem/hr}}{\text{Ci/m}^3}$ = whole body dose factor from Attachment 2 as a function of time after shutdown

$\frac{\text{Xu}}{\text{Q}}$ = atmospheric dilution factor from Attachment 1 based on type of release, stability class, and downwind distance.

5.7.5 Project offsite dose rate at other downwind distances using source strength determined in Section 5.7.4. Enter '2' in the "source strength method" column for each projection. Reference Section 5.5.3 through 5.5.6 for calculation methodology.

5.7.6 Once all data and calculations are complete, communicate results to Emergency Director.

5.8 Liquid Release

5.8.1 If average diluted concentration of discharge canal exceeds 10 CFR 20, Appendix B, Table II, Column 2 limits as determined by chemistry sample analysis, notify Group Shift Supervisor and/or Emergency Director and recommend declaration of an Unusual Event Emergency Classification.

10 CFR 20 Limits exceeded_____Time_____Date_____

NOTE: Include a copy of sample analysis with this procedure.

5.8.2 Confirm sample analysis results and notify Emergency Director.

5.8.3 Continue sampling Discharge Canal until sample analysis by chemistry confirms that average diluted concentration of Discharge Canal is less than 10 CFR 20, Appendix B, Table II, Column 2 limits. Record results on Liquid Release Sample Results and communicate to Emergency Director.

LIQUID RELEASE SAMPLE RESULTS

Sample Location	(Time)	Date	% 10 CFR 20	Analysis Confirmed by	Time/Initials
1.		/ /			/
2.		/ /			/
3.		/ /			/
4.		/ /			/
5.		/ /			/

ATTACHMENT 1

Atmospheric Dilution Factors
as a Function of Downwind
Distance and Atmospheric
Stability Class

ELEVATED RELEASE

Dilution Factor $\frac{X_u}{Q}$ (m^{-2})

Distance (miles)	Unstable	Neutral	Stable
0.25	4.57E-12	2.77E-21	1.31E-20
0.50	8.69E-07	8.64E-22	4.12E-21
1.0	3.40E-06	5.68E-12	2.39E-18
2.0	9.37E-07	3.32E-08	6.48E-11
3.0	5.25E-07	5.39E-07	3.24E-08
4.0	3.92E-07	1.08E-06	3.77E-07
5.0	3.29E-07	1.32E-06	1.12E-06
10.0	1.87E-07	1.20E-06	3.33E-06

From: "CRISO-Dispersion and/or Dose Isopleths for Emergency-Class A Model" by Pickard, Lowe, & Garrick, Inc.

ATTACHMENT 1 (cont'd)

Atmospheric Dilution Factors
as a Function of Downwind
Distance and Atmospheric
Stability Class

GROUND RELEASE

Dilution Factor $\frac{Xu}{Q}$ (m^{-2})

Distance (miles)	Unstable	Neutral	Stable
0.25	4.83E-05	3.18E-04	8.91E-04
0.50	1.69E-05	1.35E-04	4.86E-04
1.0	4.15E-06	5.27E-05	2.26E-04
2.0	9.06E-07	2.16E-05	1.08E-04
3.0	5.11E-07	1.02E-05	5.81E-05
4.0	3.88E-07	6.95E-06	4.18E-05
5.0	3.26E-07	5.25E-06	3.21E-05
10.0	1.87E-07	2.11E-06	1.50E-05

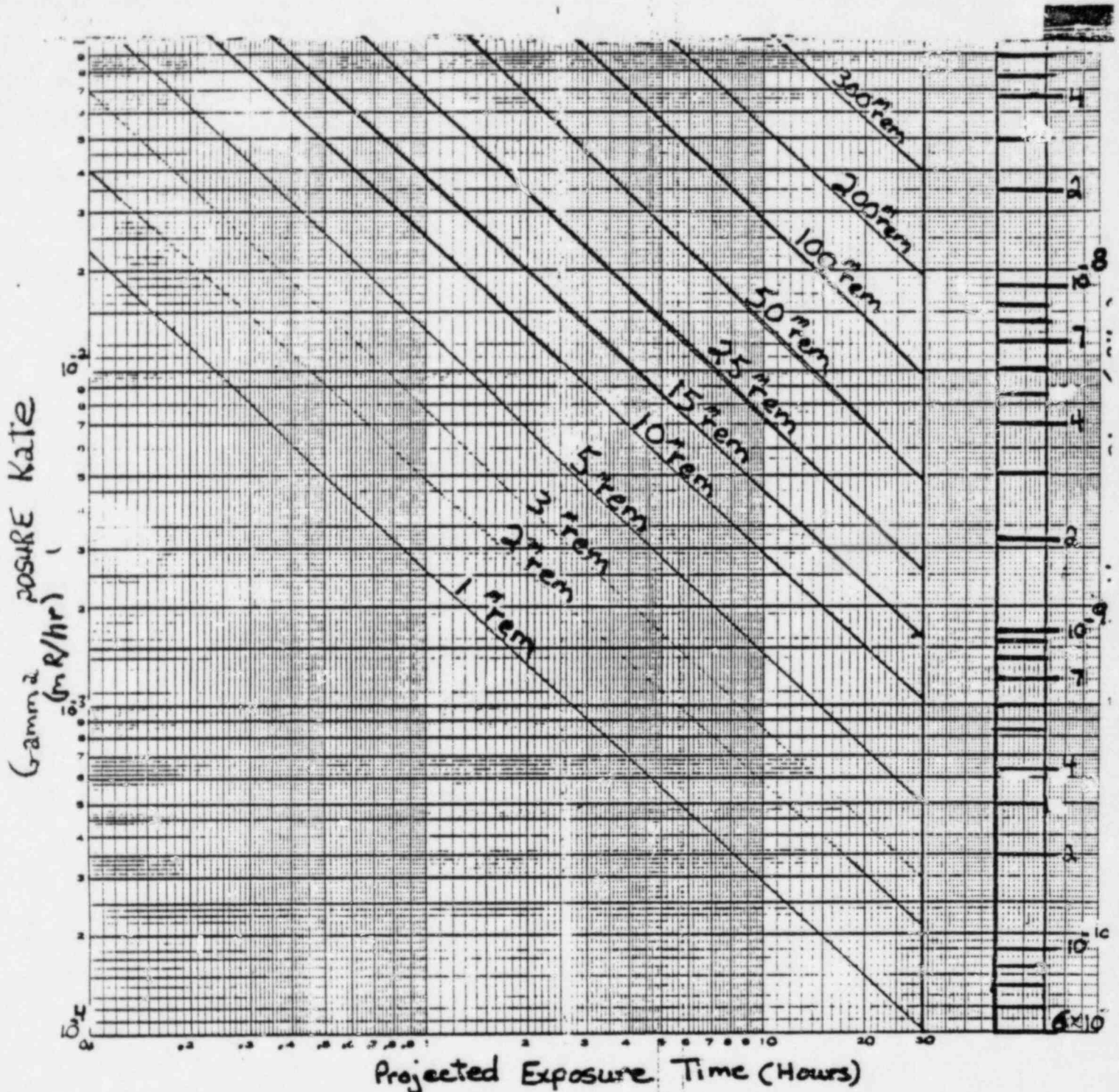
From: "CRISO-Dispersion and/or Dose Isopleths for Emergency-Class A Model" by Pickard, Lowe, & Garrick, Inc.

ATTACHMENT 2

WHOLE BODY DOSE FACTOR AS A FUNCTION
OF TIME AFTER SHUTDOWN

TIME AFTER SHUTDOWN (HRS)	WHOLE BODY DOSE FACTOR mRem/hr per Ci/m^3
0	5.3E + 05
1.5	5.0E + 05
2.5	4.3E + 05
3.5	3.7E + 05
4.5	3.1E + 05
6.5	2.3E + 05
12.5	1.2E + 05

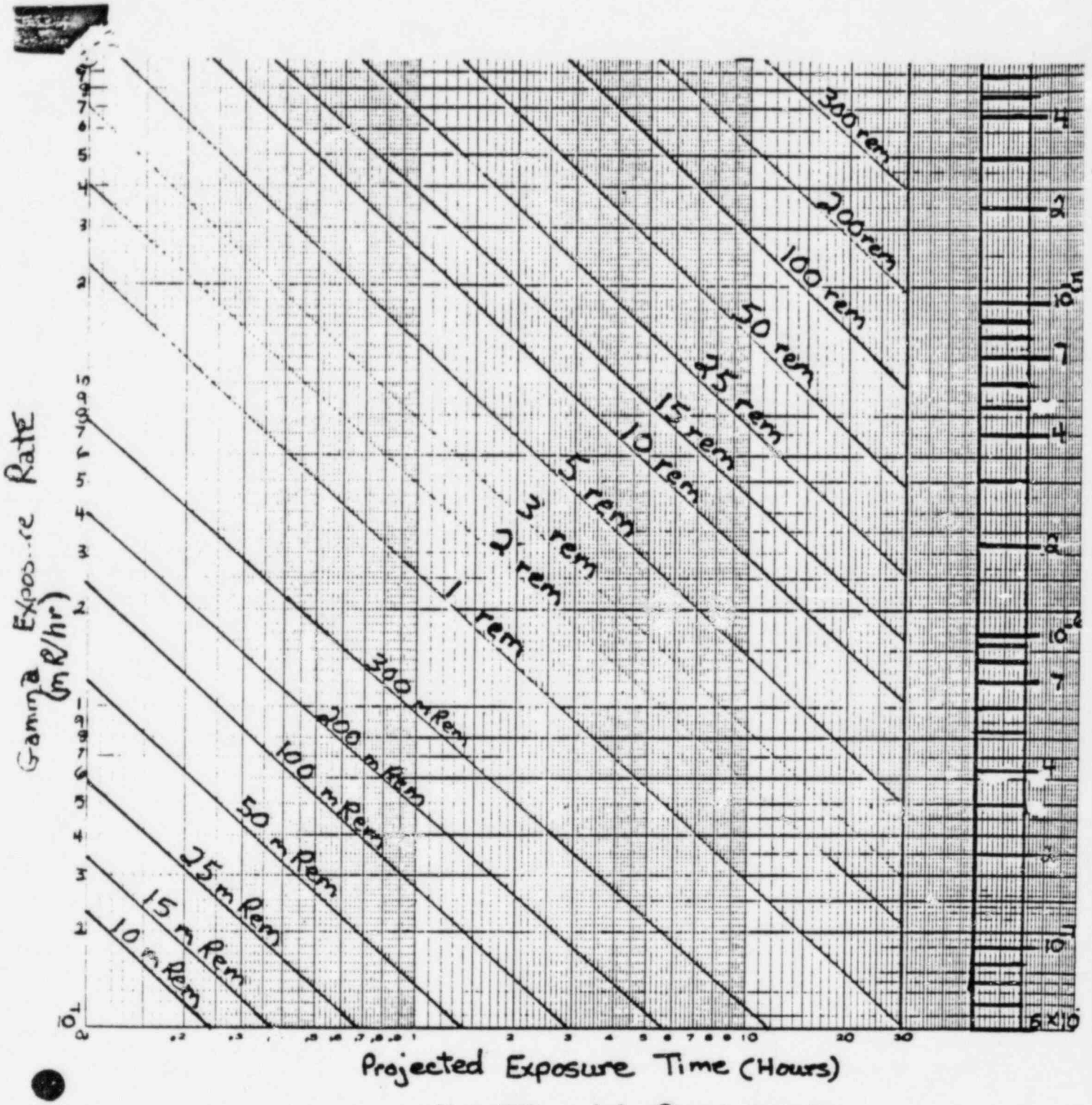
FROM: Federal Emergency Management
Administration Course - "Dose Projection"
by Joe E. Logsdon



Projected Child Thyroid Dose as a Function of either Gamma Exposure Rate, or Radioiodine Concentration in Air and the Projected Exposure Time

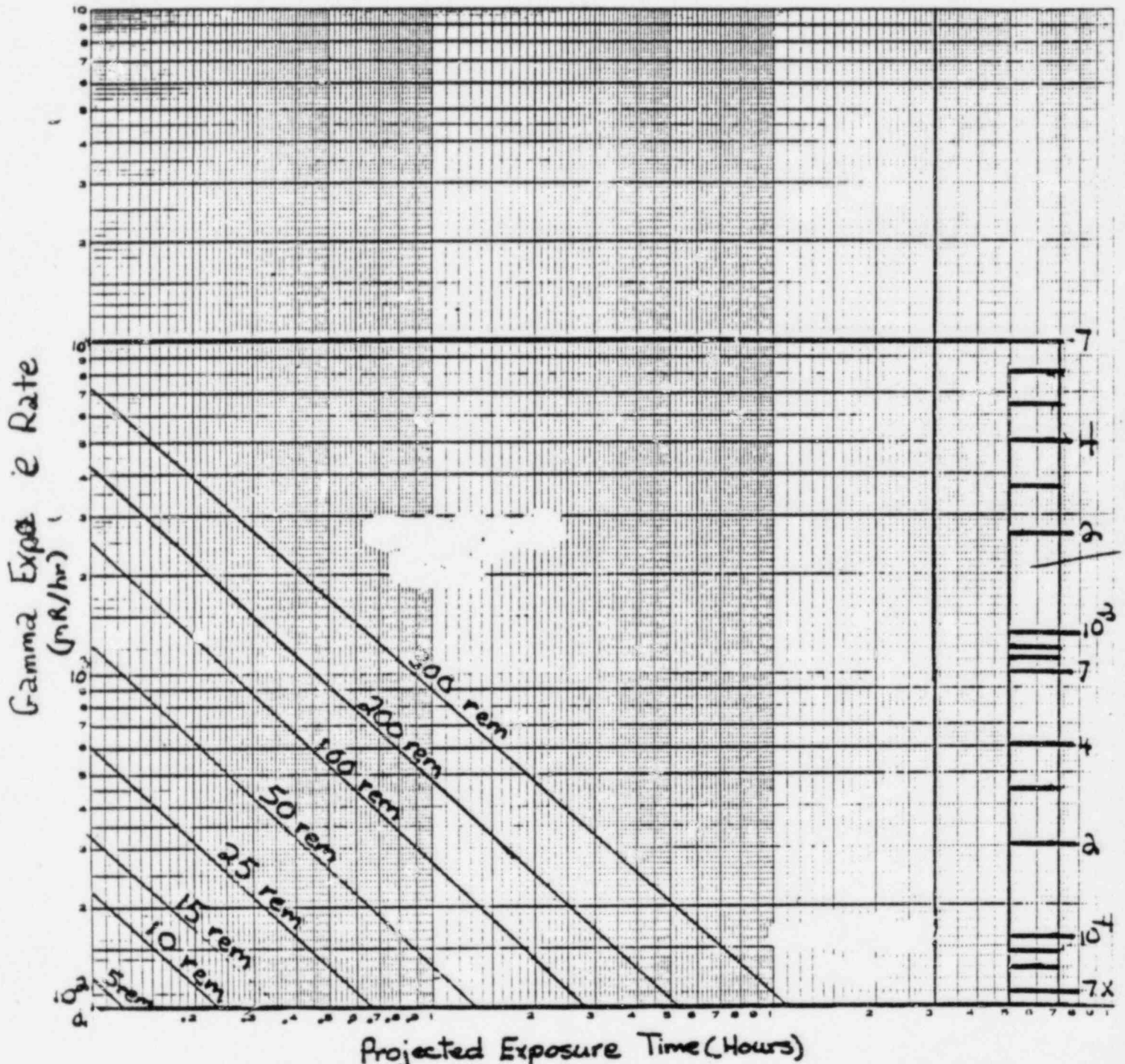
Attachment 3
- p. 1 of 3

From: Federal Emergency Management Administration
Course - "Dose Projection" by Joe E. Logsdon



Projected Child Thyroid Dose as a Function of either Gamma Exposure Rate, or Radioiodine Concentration in Air and the Projected Exposure Time

Attachment 3
p. 2 of 3



Projected Child Thyroid Dose as a Function of either Gamma Exposure Rate, or Radioiodine Concentration in Air and the Projected Exposure Time

Attachment 3
p. 3 of 3.

FORM EPIP 9-1
METEOROLOGICAL PARAMETERS TABLE

	Chart Recorder Wind Direction (°)	Converted Downwind Value (°)	Affected Sector (Compass Point)	Δt (°F.)	Stability Class	Wind Speed (mph)	Wind Speed (m/sec)	Time/ Initial
1.								/
2.								/
3.								/
4.								/
5.								/
6.								/
7.								/
8.								/
9.								/
10.								/
11.								/
12.								/
13.								/
14.								/
15.								/
16.								/
17.								/
18.								/
19.								/
20.								/

FORM EPIP 9-2

POSTULATED OFFSITE DOSES FROM DESIGN BASIS ACCIDENTS

Note: All doses are in REM Whole Body Dose for a 2 hour release at a windspeed of 1 mph (0.45 m/sec)

1. Refueling Accident (Rem) - Basis Dose

Distance (Miles)	Stability Class Stable	Neutral	Unstable
0.25	2.55E-04	2.55E-04	4.00E-04
0.50	2.09E-04	2.27E-04	3.43E-04
1.0	1.45E-04	1.91E-04	1.73E-04
2.0	8.82E-05	1.18E-04	6.27E-05

2. Control Rod Drop Accident (Rem) - Basis Dose

Distance (Miles)	Stability Class Stable	Neutral	Unstable
0.25	3.0E-01	3.09E-01	4.55E-01
0.50	2.64E-01	2.82E-01	4.00E-01
1.0	1.91E-01	2.36E-01	2.09E-01
2.0	1.27E-01	1.55E-01	7.82E-02

3. Loss of Coolant Inside Drywell Accident (REM) - Basis Dose

Distance (Miles)	Stability Class Stable	Neutral	Unstable
0.25	7.45E-06	7.55E-06	1.09E-05
0.50	6.36E-06	6.91E-06	1.00E-05
1.0	4.64E-06	5.73E-06	5.09E-06
2.0	2.91E-06	3.64E-06	1.91E-06

4. Steam Line Break Outside Reactor Building (REM) - Basis Dose

Distance (Miles)	Windspeed Basis of 50mph, DO NOT DIVIDE BY WIND SPEED Whole Body Dose (Rem)
0.25	3.6E-06
0.50	2.0E-06
1.0	8.6E-07
2.0	3.2E-07
5.0	6.6E-08
10.0	1.9E-08

FORM EPIP 9-2

"POSTULATED OFFSITE DOSES FOR DESIGN BASIS ACCIDENTS" WORKSHEET

Date / /

Time/Initials

Type of Design Basis Accident _____

_____ /

Affected Sector (Compass Point)	Stability Class	Wind Speed (MPH)	Wind Speed (M/Sec)	0.25 mi Dose (Rem)	0.50 mi. Dose (Rem)	1.0 mi. Dose (Rem)	2.0 Dose (Rem)	
1.								/
2.								/
3.								/
4.								/
5.								/
6.								/
7.								/
8.								/
9.								/
10.								/

FORM EPIP 9-3

SOURCE STRENGTH DETERMINATION TABLE

1. Elevated Release

Date / /

A. TOTAL STACK AIR FLOW

	Reactor Bldg. (Cfm)	Turbine Bldg. (Cfm)	Old Radwaste Bldg. (Cfm)	New Radwaste Bldg. (Cfm)	Standby Gas Treatment (Cfm)	Other (Cfm)	Total (Cfm)	Time/Initials
1.	65,000	82,000	14,600	38,000	2,600			/
2.	65,000	82,000	14,600	38,000	2,600			/
3.	65,000	82,000	14,600	38,000	2,600			/
4.	65,000	82,000	14,600	38,000	2,600			/
5.	65,000	82,000	14,600	38,000	2,600			/

B. STACK RELEASE SOURCE STRENGTH

	Stack Monitor (Counts/Sec)	Conversion Factor (uCi/Sec per count/sec)	Stack Correction Factor	Ci/uCi	Ci/Sec	Time/Initials
1.				1.0E-06		/
2.				1.0E-06		/
3.				1.0E-06		/
4.				1.0E-06		/
5.				1.0E-06		/

C. GROUND RELEASE SOURCE STRENGTH

	Source of Release (Area or Location)	Air Activity (uCi/cc)	Release Rate (ft^3 / min)	Conversion Factor	Ci/sec	Time/Initials
1.				4.72E-04		
2.				4.72E-04		
3.				4.72E-04		
4.				4.72E-04		
5.				4.72E-04		

FORM EPIP 9-4

OFFSITE DOSE PROJECTION TABLE Date: / /

1. OFFSITE DOSE - WHOLE BODY EXPOSURE

Source St. Meth.	Affected Sector (Compass Point)	Dist. Mile	Type of Release	Stability Class	$\frac{Xu}{Q}$ (m^{-2})	$\bar{u}$ (m/sec)	$\frac{Ci}{sec}$	$\frac{mRem/hr}{Ci/m^3}$	Dose Rate mRem/hr	Hrs. of Rel.	Integrated Dose mRem	HRS Time to Reach PAG	Time/ Initials
1.													/
2.													/
3.													/
4.													/
5.													/
6.													/
7.													/
8.													/
9.													/
10.													/

2. OFFSITE DOSE - CHILD THYROID

Source St. Meth.	Affected Sector (Compass Point)	Dist. Mile	Whole Body Exposure mRem/hr	Proj. Exp. Time (HR)	Child Thyroid Dose(Rem)	Child (Rem/Hr) Thyroid Dose Rate	HRS Time to Reach PAG	Time/ Initials
1.								/
2.								/
3.								/
4.								/
5.								/
6.								/
7.								/
8.								/
9.								/
10.								/

FORM EPIP 9-5

OFFSITE MONITORING DOSE PROJECTION TABLE

Date ___/___/___

1. INTEGRATED DOSES

Monitoring Location	Azimuth (Degrees)	Dist. Miles	Air Conc. (uCi/cc)	Projected (hr) Exposure Time	Integrated Child Thyroid Dose (Rem)	Whole Body Dose Rate mRem/hr	Integrated Whole Body Dose (mRem)	Time/ Initials
1.								/
2.								/
3.								/
4.								/
5.								/
6.								/
7.								/
8.								/
9.								/
10.								/

2. AIR SAMPLE ACTIVITY

Monitoring Location	Azimuth (Degrees)	Dist. Miles	NCPM	Conversion Factor	% Efficiency	uCi/cc	Time/ Initials
1.				7.5E-11			/
2.				7.5E-11			/
3.				7.5E-11			/
4.				7.5E-11			/
5.				7.5E-11			/
6.				7.5E-11			/
7.				7.5E-11			/
8.				7.5E-11			/
9.				7.5E-11			/
10.				7.5E-11			/

JCP&L / GPU

Jersey Central
Power & Light Company

Procedure No. EPIP-22	Page 1 Of 5
Date Issued 2/24/81	Effective Date (12/8/82) 12/18/82
Revision No. 1	Date 11/2/82
Authorized By Director-Station Operations	

Subject: Search and Rescue

Approval/Concurrence

Project:
Oyster Creek Nuclear Generating Station

LIST OF EFFECTIVE PAGES	DATE	REVISION NUMBER
1	11/2/82	1
2	11/2/82	1
3	11/2/82	1
4	11/2/82	1
5	11/2/82	1

ATTACHMENT

Form 22-1 (1 page)	11/2/82	1

1.0 PURPOSE

This procedure prescribes the implementation of Search and Rescue Operations at Oyster Creek Nuclear Generating Station.

2.0 REFERENCES

2.1 EPIP-2 Unusual Event

2.2 EPIP-3 Alert

2.3 EPIP-4 Site Emergency

2.4 EPIP-5 General Emergency

2.5 EPIP-7 Personnel Injury

3.0 RESPONSIBILITIES

3.1 The Emergency Director is responsible to evaluate conditions which could require initiating of Search and Rescue Operations.

3.2 The Operations Support Center Coordinator is responsible to assemble, prepare and dispatch all Search and Rescue parties and to carry out the requirements of this procedure when activated.

3.3 The Operations Support Center Coordinator is responsible to insure the attached Checklist is completed in accordance with Section 5.0 of this procedure.

4.0 PREREQUISITES

4.1 Search and Rescue may be initiated during any class of emergency (i.e., Unusual Event, Alert, Site Emergency, and General Emergency) or by any initiating condition within these classifications.

4.2 Additionally, Search and Rescue Operations may be initiated as a result of Personnel Accountability (EPIP-12).

4.3 The following precautions will be taken:

4.3.1 Wear proper protective clothing as directed by Radiological Controls.

4.3.2 Use proper respiratory protective devices as directed by Radiological Controls.

4.3.3 Wear proper dosimetry as directed by Radiological Controls.

4.3.4 Radiation exposure to individuals exceeding 10CFR20 limits is restricted as follows:

EMERGENCY EXPOSURE LIMITS

ORGAN	PROTECTIVE OR CORRECTIVE ACTION	LIFE SAVING ACTION
Whole Body	25 Rem	75 Rem
Extremeties	100 Rem	300 Rem
Thyroid	125 Rem	No limit

4.3.5 Women capable of reproduction should not take part in actions requiring emergency exposure.

4.3.6 Emergency exposures for volunteers must be authorized by the Emergency Director. This responsibility may not be delegated.

4.3.7 All exposures will be maintained ALARA.

5.0 REQUIREMENTS

5.1 Immediate Notifications

5.1.1 Upon discovering that an individual is trapped or disabled or missing, the individual who discovers the situation shall call the Control Room, report the situation and provide the following information if known:

5.1.1.1 Name of the individual trapped, or disabled, or missing.

5.1.1.2 Location of the individual trapped or disabled.

5.1.1.3 Any circumstances which may affect Search and Rescue Operations, such as fire, explosion, or high radiation levels (see Section 4.3).

5.1.2 If an individual is missing, Search and Rescue Operations shall proceed in accordance with Section 5.2.1. If an individual is trapped or disabled, Search and Rescue Operations shall proceed in accordance with Section 5.2.2.

5.2 Search and Rescue Operations

5.2.1 If a missing person report is received in the Control Room from Station Accountability or any other source, the following actions should be initiated to locate the missing person:

5.2.1.1 Contact the individual's supervisor.

5.2.1.2 If the individual's supervisor does not know his location, page the individual using the Public Address System (repeat the page).

5.2.1.3 If the page is not answered in two minutes, telephone the individual's home (if the number can be obtained).

5.2.1.4 If the missing individual has not been located following the completion of Step 5.2.1, the Emergency Director or his designee shall direct the Search and Rescue team to be dispatched from the OSC to locate the individual.

5.2.1.5 The OSC Coordinator or his designee will organize the search, using any information available concerning the potential location of the missing individual.

5.2.1.6 After the individual has been located and if medical assistance is necessary, the Search and Rescue team shall render first aid and EPIP-7 will be initiated by the OSC Coordinator.

5.2.2 If a trapped or disabled person report is received in the Control Room, the Emergency Director shall direct the Search and Rescue team to be dispatched from the OSC accompanied by the Medical Representative, if available, and a Radiological Controls Technician, if appropriate assistance is required. EPIP-7 will be implemented.

5.3 Termination of Search and Rescue Operations

5.3.1 Search and Rescue operations may be terminated by the Emergency Director or his designee when all of the following conditions are met:

5.3.1.1 All missing persons have been accounted for.

5.3.1.2 All injured or disabled persons are in the care of medical personnel in accordance with EPIP-7 or have been released by the Medical Representative.

5.3.1.3 All trapped persons have been rescued and released from their entrapment to return to their duties.

5.3.1.4 Search and Rescue teams have returned to their duty station to stand by.

Form 22-1

SEARCH AND RESCUE CHECKLIST

Note: When activated, the Operations Support Coordinator or his designee will complete this checklist.

Time/ Initials

_____ / _____ Trapped/disabled/missing persons report received:

Name (if known) _____

Location (if known) _____

_____ / _____ Supervisor contacted for information on whereabouts.

_____ / _____ Plant page used to contact missing person (wait 2 minutes for response).

_____ / _____ Contact missing person's home for information on whereabouts.

_____ / _____ Dispatch Search and Rescue team, including Radiological Controls Technician and medical personnel, as appropriate.

_____ / _____ EPIP-7 initiated for injured person.

Terminate Search and Rescue Operations when:

_____ / _____ All missing persons are accounted for.

_____ / _____ All injured/disabled persons are receiving medical care in accordance with EPIP-7.

_____ / _____ All trapped persons have been rescued.

_____ / _____ Search and Rescue teams returned to duty stations.