

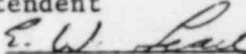
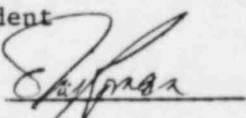
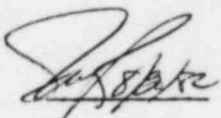
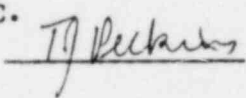
# INFORMATION ONLY

## NINE MILE POINT NUCLEAR STATION

### EMERGENCY PLAN AND PROCEDURES

#### PROCEDURE NO. EPP-12

#### RE-ENTRY PROCEDURE

<u>APPROVALS</u>	<u>SIGNATURES</u>	<u>DATE AND INITIALS</u>		
		<u>REVISION 4</u>	<u>REVISION 5</u>	<u>REVISION 6</u>
Chemistry & Radiation Management Superintendent E. W. Leach		8/16/82 EWL	_____	_____
Station Superintendent NMPNS T. W. Roman			_____	_____
General Superintendent Nuclear Generation Chairman of S.O.R.C. T. J. Perkins		8/17/82 TJP	_____	_____

#### Summary of Pages

Revision 4, dated May 1982, consists of pages i, 1-9, with changes on pages i, 1, 3-9.

#### NIAGARA MOHAWK POWER CORPORATION

THIS PROCEDURE NOT TO BE  
USED AFTER August 1984,  
SUBJECT TO PERIODIC REVIEW.

EPP-12

RE-ENTRY PROCEDURE

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## EPP-12

### RE-ENTRY PROCEDURE

#### 1.0 PURPOSE

The purpose of the Re-entry Procedure is to outline the method used to re-enter potential radioactively contaminated areas caused by a radiation emergency at the NMP Site. Re-entry surveys are not to take the place of downwind surveys for evaluating radiological releases. The objective of these re-entry surveys is to evaluate hazards to personnel approaching the Site from the Alternate Emergency Operations Facility and to perform a comprehensive survey of the Station to define radiological problem areas.

#### 2.0 REFERENCES

- a. EPP-7 Dowill Wind Radiological Monitoring
- b. EPP-10 Emergency Equipment Inventories and Check Lists
- c. EPP-15 Health Physics Procedure

#### 3.0 RESPONSIBILITY

##### 3.1 Radiological Assessment Coordinator

- a. Responsible to the Emergency Director for managing the radiological monitoring and assessment aspects of a re-entry operation.
- b. Provides technical and administrative direction to the Station Survey/Sample Team Coordinator and staff during re-entry operations.

##### 3.2 Station Survey/Sample Team Coordinator

- a. Responsible to the Radiological Assessment Coordinator for providing technical and administrative direction to re-entry survey teams.

##### 3.3 Re-entry Survey Teams

- a. Responsible to the Station Survey/Sample Team Coordinator for performing appropriate re-entry radiation surveys and assessment of radiological problem areas.

#### 4.0 EQUIPMENT

##### 4.1 Equipment Location

The equipment used to make a re-entry survey can be found in the Alternate Emergency Operations Facility Emergency Kit located at the NMPC Oswego Service Center.

##### 4.2 Equipment Summary

The complete description of the equipment contained within the Alternate EOF is contained in EPP-10, "Emergency Equipment Inventories and Checklist".

##### 4.2.1 Protective Clothing

The following protective clothing is available and may be worn if necessary.

- a. Coveralls
- b. Boot Covers
- c. Rubber Boots
- d. Hoods
- e. Rubber or Cotton Gloves
- f. Respirators with Charcoal Cartridges
- g. Self-Contained Breathing Apparatus (Scott Pak II)

##### 4.2.2 Survey Equipment

The following equipment is available and should be used for the survey.

- a. Count Rate Meter (GM type)
- b. Dose Rate Meter (Ion Chamber type)
- c. High Volume Air Sampler (DC)
- d. Fiberglass Particulate Filters
- e. Charcoal Sampling Cartridges
- f. Silver Zeolite Cartridges
- g. Emergency Procedures Binder with Survey Logs and Maps
- h. Film Badges and Dosimeters
- i. Environmental Cabinet Key

##### 4.2.3 Communication Equipment

- a. High Band Portamobile Radio

##### 4.2.4 Transportation

- a. Whenever possible, all re-entry surveys should be performed in radio-equipped company vehicles. Currently three such vehicles are driven by Site On-Call Supervisors and would be made available to the Re-entry Team(s).

RE-ENTRY TEAM COMPOSITION

When possible, re-entry team(s) will be composed of a Chemistry and Radiation Management Department Supervisor and a Chemistry and Radiation Protection Technician. If this staffing is impossible the team(s) shall be comprised of one Chemistry and Radiation Management Department personnel and another individual.

Re-entry surveys should always be made in pairs and never alone.

RADIOLOGICAL PRECAUTIONS

The following radiological precautions should be adhered to during re-entry surveys

High Radiation Levels

- a. If the degree of urgency permits, thoroughly survey the area to be entered to determine radiation levels.
- b. Wear a Film Badge and a 0-5R direct-reading dosimeter.
- c. Use time, distance and shielding whenever possible to minimize exposure to search and rescue personnel.
- d. If beta radiation levels are high, wear heavy protective clothing and eye protection, if not already being worn, for shielding.
- e. If exposures exceeding 10 CFR 20 limits will be necessary, ensure that the guidance and requirements of EPP-15 "Health Physics Procedure" are followed.

High Airborne Radioactivity Concentrations

- a. If the degree of urgency permits, take air samples in the area to be entered to determine the airborne radioactivity concentrations.
- b. Wear protective clothing, as required.
- c. Wear respiratory protective equipment commensurate with the airborne concentration in the area. If the concentration in the area is unknown, wear self-contained breathing equipment.

### 6.3 High Surface Contamination Levels

- a. If the degree of urgency permits, survey the area to be entered to determine the surface contamination levels.
- b. Wear protective clothing commensurate with the contamination levels known or expected to exist in the area.
- c. Wear respiratory protective equipment if contamination levels are unknown or exceed about 25,000 dpm/100 cm<sup>2</sup>.

### 7.0 SITE RE-ENTRY PROCEDURE

The following procedure will be used during off-hour radiation emergencies which may affect off-site personnel. Under these conditions, the Site emergency personnel may be required to assemble at the Alternate Emergency Operations Facility. The survey outlined below will be made as soon as possible so as to facilitate moving the emergency operations center to the On-Site Technical Support Center or Near-Site Emergency Operations Facility, and to define radiological problems that may be encountered by subsequent emergency teams (e.g., damage control, search and rescue, etc.)

#### 7.1 Site Approach

The survey team should use available vehicles (either NMPC or private) to approach the site from the up-wind direction. The wind direction at the site should be ascertained via telephone or radio contact with the control room.

##### 7.1.1 Preparation

The following preparation will be made by the survey team before leaving the Alternate Emergency Operations Facility:

- a. Obtain a briefing from the Emergency Director, Radiological Assessment Coordinator or Station Survey/Sample Team Coordinator regarding:
  - 1) required monitoring location data
  - 2) anticipated levels of radiation and contamination enroute
  - 3) suggested routes
  - 4) required protective gear
  - 5) exposure limits allowed for the re-entry
  - 6) reporting location for survey results, samples, and data sheets
- b. Don protective clothing:
  - 1) Coveralls
  - 2) Boot covers
  - 3) Rubber boots
  - 4) Hood
  - 5) Rubber or cotton gloves

#### 7.1.1 Preparation (Cont.)

- c. Clip on film badge and dosimeter
- d. Place poly sheet on front seat of vehicle.
- e. Place clipboard with Survey Log Sheet in car.
- f. Turn on the following survey meters and place in vehicle.
  - 1) Dose Rate Meter (Ion Chamber type)
  - 2) GM Survey Meter (GM type)
- g. Place the following sampling equipment in the vehicle:
  - 1) High volume air sampler (12 v d-c)
  - 2) Charcoal and glass fiber filters
  - 3) Silver zeolite cartridges
- h. Place charcoal cartridge respirator and self-contained breathing apparatus (one for each surveyor) in vehicle. Not required until exiting from vehicle to make first survey. Determination as to which type of respiratory protection to use when exiting at the Site should be based on surveys taken while approaching Site.

NOTE:

If the vehicle ventilation system (heater) is on or if the vehicle has a continuous ventilation system, don respirator if instruments indicate the plume is being approached. Significant deviation in open window and closed window readings indicates possible  $\beta$  exposure. Otherwise, the respirator need not be donned until exiting from the vehicle to make the first survey.

- i. Prior to leaving equipment storage location, ensure all equipment is operational.

#### 7.1.2 Observations

While traveling to the Site, the survey meters should be turned on in the vehicle and observed by the passenger. If any readings significantly above background are observed, the vehicle should be halted and a survey made as outlined below.

#### 7.2 Site Boundary Survey

When the Site boundary is reached, the vehicle should be halted and after putting on a respirator, the following surveys should be made at the roadside.

### 7.2.1 Gamma Dose Rate Measurements

Two different readings (ground level and waist level) are taken at each survey point. These two readings should assist in evaluation of whether the activity is coming from an overhead plume or a ground deposit. Reading will be taken after air sampler has been started at a given location, if air sample is required.

NOTE: Take an air sample only if there is significant deviation between "open" and "closed" window readings.

#### Ground Level Readings

Ground level reading should be taken at approximately 3 in. from the ground using a Count Rate Meter. Readings over 20,000 c/m should be taken with a Dose Rate Meter; record open window and closed window readings.

#### Waist Level Readings

Take waist level readings (approximately 3 ft. from the ground) at each of the locations where a ground level reading is taken. Readings over 20,000 c/m should be taken with a Dose Rate Meter; record open window and closed window readings.

### 7.2.2 Air Sample Measurements

- a. Using a portable high volume air sampler with both particulate filter and Iodine collection cartridge obtain a 5-10 minute sample (approximately 15 cubic feet). Record Flow Rate and the time the sampling is started and stopped.

NOTE: Silver Zeolite Sampling Cartridges shall be used until it has been determined that noble gas interference of air sample measurements is not a problem.

- b. Label the sample envelopes for location and times.
- c. After obtaining samples, travel to an area of low background (< 100 cpm) and run high volume air sampler for approximately 1 minute to clear inert gases from the cartridge.

NOTE: If sample has been taken on Silver Zeolite Cartridge(s) the post-sampling purge is not required.

- d. Obtain a background count using a count rate meter and count the particulate filter and Iodine cartridge separately. During counting hold the probe approximately 1/2 to 3/4 inch from the cartridge or filter and count for a total time of 1 minute. Log the maximum count rate observed on the Survey Data Sheet (Figure #1). Iodine sample count greater than 10,000 cpm should be returned for GeLi analysis expeditiously.

### 7.2.2 Air Sample Measurements (Cont.)

- e. Return labeled air sample filters and cartridges to the location specified in 6.1.1.a for GeLi analysis.

NOTE: Sample analysis may be performed onsite at the Station Chemistry laboratory or at the JAFNPP Station or Environmental Chemistry Laboratory.

### 7.2.3 Reporting Results of Re-entry Surveys

As surveys are completed record results on Figure 1 and transmit results to the AEOF or the location specified under 6.1.1.a.

### 7.2.4 Survey Evaluation

As survey results are received from the survey teams the Radiological Assessment Coordinator or the Station Survey/Sampler Team Coordinator will calculate dose rates and airborne concentrations using the methodology and figures described in EPP-7 Step 5.2.7.

The results will be evaluated by the Radiological Assessment Coordinator and appropriate recommendations made to the Emergency Director.

### 7.3 Site Survey

After the Site boundary survey has been performed (radiation survey and airborne activity), and the data transmitted to the Station Survey/Sample Team Coordinator at the AEOF or the location described in 6.1.1a, the survey team will proceed to perform additional surveys if conditions permit ( $< 100$  mr/hr). Locations where additional surveys should be performed include:

- a. Nearsite EOF
- b. Security Building

### 8.0 STATION RE-ENTRY SURVEY PROCEDURE

#### 8.1 Entry

The survey team should enter the Administration Building (still wearing protective equipment) making dose rate measurements as they go. Upon entering the building they should contact the control room to inform them that they are present and are ready to make a survey of the emergency centers. Areas to be surveyed should include the:

- a. TSC and Administration Building, 277' Elevation
- b. OSC and Administration Building, 266' Elevation
- c. Station Chemistry Laboratory

## 8.2 Station Surveys

An evaluation of surface contamination levels, Beta-gamma dose rates, and airborne activity should be performed at each of the locations described in Step 8.1. As surveys are completed, record results in Figure 1 and transmit to the Station Survey/Sample Team Coordinator at the AEOF or location described in 6.1.1a.

## 8.3 Survey Evaluation

The survey results will be calculated and evaluated by the Radiological Assessment Coordinator or the Station Survey/Sample Team Coordinator using the methodology described in EPP-7 and EPP-8. After evaluation of the survey results, the Radiological Assessment Coordinator will provide appropriate recommendations to the Emergency Director on the advisability of moving emergency personnel back to the onsite emergency facilities.

During the evaluation of onsite conditions, the Emergency Director shall assemble, as appropriate, necessary emergency teams (eg Damage Control, Inplant Survey Teams, etc) for possible assignment to the site once habitable conditions have been verified.

## 9.0 NMP 2- RE-ENTRY SURVEY

When the evaluation of the NMP-1 areas have been completed, direction will be provided to the re-entry survey team(s) to evaluate radiological conditions at the NMP-Unit 2 Construction Site.

EPP-6, FIGURE 1, EPP-7, FIGURE 1, EPP-12, FIGURE 1

INPLANT/DOWNWIND/REENTRY SURVEY DATA SHEET

<input type="checkbox"/> Inplant Survey	Survey Meter	Model # _____	SR # _____	Area Radiation Monitor	Model # _____	SR # _____
<input type="checkbox"/> Downwind Survey	Count Rate Meter	Model # _____	SR # _____	Continuous Air Monitor	Model # _____	SR # _____
<input type="checkbox"/> Reentry Survey	High Volume Air Sampler	Model # _____	SR # _____	High Range Survey Meter	Model # _____	SR # _____

General Area Radiation Data

Air Sampling Data

Exposure Control Data

Survey Date/Time	Survey Location	W.O. Reading (mR/hr) or (CPM)	W.C. Reading (mR/hr) or (CPM)	Beta Correction Factor	Sample ID#	* Start Time	* Stop Time	Duration (min)	Flow Rate (cpm)	** Bkgd (cpm)	** Sample Count Rate (cpm) Part Iodine	* Surveyor's Initials	Team Members	Exposure Received (mrem)	Cumulative Exposure (mrem)
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MOVING SURVEY DATA / ARM/CAM DATA

Time	Location	Survey Data
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\*Not reported via voice communication.  
 \*\*Recorded only for Downwind Surveys.

EPP-12 -9 May 1982