

HOUSTON LIGHTING AND POWER COMPANY  
SOUTH TEXAS PROJECT  
ELECTRIC GENERATING STATION  
PLANT PROCEDURES MANUAL

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NON-SAFETY RELATED

RADIOLOGICAL INCIDENT REPORTING

PGP3-ZR-04  
Rev. 0  
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APPROVED:

\_\_\_\_\_  
PLANT MANAGER

\_\_\_\_\_  
DATE APPROVED

\_\_\_\_\_  
DATE EFFECTIVE

This procedure is not described in the FSAR.

Field changes to this procedure require the approval of the Plant Manager.

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1.0 Purpose and Scope

- 1.1 This procedure provides guidance for reporting of radiological incidents involving exposure of personnel to radiation, and concentrations of radioactive materials in excess of limits expressed in Title 10 Code of Federal Regulations Part 20.
- 1.2 This procedure provides guidance for reporting the loss or theft of licensed radioactive materials.

2.0 Definitions

- 2.1 Exposure: the quantity of radiation absorbed, per unit of mass, by the body or by any portion of the body.
- 2.2 Licensed Material: source material, special nuclear material or by-product material received, possessed, used or transferred under a general or specific license issued by the USNRC pursuant to the regulations in 10CFR20.

3.0 Procedure

- 3.1 All personnel at STPEGS that have been properly trained and qualified will be allowed to enter and work in restricted areas. This will involve exposure to controlled levels of radiation and concentrations of radioactive materials. Exposures beyond those stated in Title 10 Code of Federal Regulations Part 20, 10CFR20, (Reference 4.1) must be reported immediately to the cognizant DM/DS and to the Health and Safety Services Division.
- 3.2 Exposure of individuals to the following radiation levels and concentration of radioactive materials will require reporting to the USNRC in accordance with the reporting frequency established in paragraph 3.5 of this procedure:
  - 3.2.1 Whole body exposure in excess of 1.250 Rem per calendar quarter, if individual has not completed requirements of 10CFR20, paragraph 102, and if dose received when added to the accumulated occupational dose does not exceed  $5(N-18)$ , where N equals individual's age in years. In this event, exposures may be granted to 3.000 Rem per calendar quarter.
  - 3.2.2 Extremity exposure in excess of 18.750 Rem per calendar quarter;
  - 3.2.3 Skin exposure in excess of 7.500 Rem per calendar quarter;
  - 3.2.4 Exposures to any individuals under the age of 18 will not exceed one-tenth those exposures defined in paragraphs 3.2.1 - 3.2.3 of this procedure.
  - 3.2.5 Whole body exposure in excess of 5 Rem acute exposure, extremity exposure in excess of 75 Rem acute exposure and skin exposure in excess of 30 Rem acute exposure;
  - 3.2.6 Whole body exposure in excess of 25 Rem acute exposure, extremity exposure in excess of 375 Rem acute exposure and skin exposure in excess of 150 Rem acute exposure;

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- 3.2.7 Exposure of individuals to concentrations of radioactive materials in excess of any amount greater than the quantity which would result from inhalation or absorption through the skin for 40 hours per week for 13 weeks at uniform concentrations of radioactive materials in air as specified in 10CFR20 Appendix B, Table I, Column I.
- 3.2.8 Exposure to individuals to concentrations of U-234, U-235, or U-238 in soluble form in excess of the intake limits specified in Appendix B, Table I, Column 1 10CFR20 by inhalation or absorption through the skin.
- 3.2.9 Exposure to any individual under the age of 18 in excess of limits expressed in Appendix B, Table II, 10CFR20.
- 3.2.10 Any level of radioactive material or radiation in an unrestricted area in excess of ten (10) times any applicable limit established in 10CFR20.
- 3.2.11 All personnel at the South Texas Project Electric Generating Station (STPEGS) are responsible for reporting unauthorized radiation exposures and exposures to concentrations of radioactive materials to their immediate supervisor.
- 3.3 Reporting of these incidents at STPEGS will be via the U.S. Nuclear Regulatory Commission (USNRC) Emergency Notification System (ENS) as defined in Title 10 Code of Federal Regulations Part 50 (10CFR50), paragraph 72, directly to the USNRC Operations Center.
- 3.4 In addition, STPEGS will report the following radiological occurrences in accordance with the reporting frequency established in paragraph 3.5 of this procedure:
  - 3.4.1 The loss or theft of licensed radioactive material of such quantity that it appears a substantial hazard may result. This hazard could include unauthorized exposure to personnel in unrestricted areas.
  - 3.4.2 Levels of radiation or releases of radioactive materials in excess of limits as specified in Title 40 Code of Federal Regulations Part 190 (40CFR190), or in excess of license conditions related to compliance with 40CFR190.

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- 3.4.3 Release of radioactive materials in concentrations which, if averaged over 24 hours, exceed 5,000 times the limits specified for such material in Appendix B, Table II, of 10CFR20.
- 3.4.4 Loss of one working week or more of operation of any facility affected.
- 3.4.5 Damage to property in excess of \$200,000.
- 3.4.6 Release of radioactive materials in concentrations which, if averaged over 24 hours, exceed 500 times the limits specified for such material in Appendix B, Table II, of 10CFR20.
- 3.4.7 Loss of one working day or more of the operation of any facility affected.
- 3.4.8 Damage to property in excess of \$2,000.
- 3.5 The following incident reporting frequency is established in 10CFR20:
  - 3.5.1 Immediate notification via the USNRC ENS line is required for radiological incidents as described in paragraphs 3.2.6, 3.4.1, 3.4.3, 3.4.4, and 3.4.5
  - 3.5.2 Notification via the USNRC ENS line is required within twenty-four (24) hours for radiological incidents as described in paragraphs 3.2.5, 3.4.6, 3.4.7, and 3.4.8.
  - 3.5.3 Notification via written report is required within thirty (30) days for radiological incidents as described in paragraphs 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.7, 3.2.8, 3.2.9, 3.2.10, 3.4.1, and 3.4.2.
  - 3.5.4 A follow-up report is required, in writing, to the USNRC to report any additional information on loss or theft of licensed radioactive material as described in paragraph 3.4.1.
- 3.6 All written reports to the USNRC must conform with those requirements as stated in 10CFR50, paragraph 73 (b), (c), (d), (e), and (g).

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3.7 All written reports containing individual exposure information will contain this information in a separate part of the report. Each written report will contain the following information:

- 3.7.1 Name, age, social security number, and date of birth of individuals involved;
- 3.7.2 Extent of exposure (estimates or actual dose exposures) of each individual exposed;
- 3.7.3 Levels of radiation and concentrations of radioactive materials involved;
- 3.7.4 Cause of exposures, levels of concentrations; and,
- 3.7.5 Corrective steps taken to prevent recurrence of event;

3.8 After the event is controlled to prevent any further exposures or releases of radioactive materials, the area involved will be isolated for investigation. The Radiological Support Services Section, under the direction of the H&SSDM, will investigate the area and the circumstances of the accident will be studied. Additional staff personnel will be appointed by the H&SSDM and Plant Manager to supplement this investigative staff as required. An accident/incident report will be submitted within fifteen (15) days of the event to HL&P management. This report will contain the facts necessary to submit the required report data to the USNRC in accordance with paragraph 3.7.

### 4.0 Documentation

4.1 All documents and reports generated by this procedure will be retained as detailed in 10CFR20.401.

### 5.0 References

- 5.1 Title 10 Code of Federal Regulations Part 20
- 5.2 Title 10 Code of Federal Regulations Part 50
- 5.3 Title 40 Code of Federal Regulations Part 190