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THE FOLLOWING CHANGES HAVE OCCURRED TO THE HARDCOPY OR ELECTRONIC MANUAL ASSIGNED TO YOU:

105 - 105 - TSC DOSE CALCULATOR: EMERGENCY PLAN-POSITION SPECIFIC PROCEDURE

REMOVE MANUAL TABLE OF CONTENTS DATE: 06/24/2003

ADD MANUAL TABLE OF CONTENTS DATE: 06/26/2003

CATEGORY: PROCEDURES TYPE: EP

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REMOVE: REV:15

ADD: REV: 16

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# PROCEDURE COVER SHEET

PPL SUSQUEHANNA, LLC		NUCLEAR DEPARTMENT PROCEDURE		
<p>TSC DOSE CALCULATOR:</p> <p>EMERGENCY PLAN POSITION SPECIFIC INSTRUCTION</p>				<p>EP-PS-105</p> <p>Revision 16</p> <p>Page 1 of 3</p>
<p><u>QUALITY CLASSIFICATION:</u></p> <p>( ) QA Program    (X) Non-QA Program</p>		<p><u>APPROVAL CLASSIFICATION:</u></p> <p>( ) Plant    ( ) Non-Plant</p> <p>(X) Instruction</p>		
<p>EFFECTIVE DATE: <u>6-26-2003</u></p> <p>PERIODIC REVIEW FREQUENCY: <u>Two Years</u></p> <p>PERIODIC REVIEW DUE DATE: <u>6-26-2005</u></p>				
<p><u>RECOMMENDED REVIEWS:</u></p> <p>All</p>				
<p>Procedure Owner: <u>Nuclear Emergency Planning</u></p> <p>Responsible Supervisor: <u>Radiation Protection Manager</u></p> <p>Responsible FUM: <u>Supervisor-Nuclear Emergency Planning</u></p> <p>Responsible Approver: <u>Vice President-Nuclear Operations</u></p>				

**TSC DOSE CALCULATOR:**

**Emergency Plan-Position Specific Instruction**

**WHEN:** TSC is activated

**HOW NOTIFIED:** Paged, both on- and off-hours

**REPORT TO:** Radiation Protection Coordinator (RPC)

**WHERE TO REPORT:** TSC

**OVERALL DUTY:**

Analyze plume characteristics and effects.

**MAJOR TASKS:**

**TAB:**

**REVISION:**

Obtain briefing from the RPC, then Health Physics II Dose Calculator.

TAB A

2

Assist HP II Dose Calculator in specialized calculations or SPING console operations.

TAB B

11

Manage OSCAR and other Field Monitoring Team(s).

TAB C

6

Validate existing dose calculations.

TAB D

6

Verify accuracy of current classification.

TAB E

1

Assess the plume characteristics.

TAB F

3

Notify the RPC of change in radiological condition that may trigger reclassification or a protective action recommendation.

TAB G

2

Monitor trends in release rates, offsite exposure, and affected sectors.

TAB H

0

Inform RPC, then coordinate turning over dose calculations to the EOF.

TAB I

8

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**SUPPORTING INFORMATION:****TAB:**

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Emergency Classification	TAB 6
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PP&L Emergency Personnel Dose Assessment and Protective Action Recommendation (PAR) Guide	TAB 8
Met/Vent Data Acquisition	TAB 9
Vent Monitor Data Acquisition	TAB 10
MIDAS Operating Procedure	TAB 11
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**REFERENCES:**

SSES Emergency Plan

EP-PS-107, Health Physics Radioman

NUREG-0654, Planning Standards and Evaluation Criteria

NUREG-0731, Guidelines for Utility Management Structure and Technical  
Resources, September 1980

**MAJOR TASK:**

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Obtain briefing from the RPC, then Health Physics II Dose Calculator.

**SPECIFIC TASKS:**

**HOW:**

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1. Go to TSC and talk with RPC, then HP II Dose Calculator.

- 1a. Ask key questions which might include:
- (1) What is OSCAR's status and that of any other Field Monitoring Team personnel?
  - (2) Is there a release or is one imminent?
  - (3) What is the emergency classification?
  - (4) What is the affected sector?

**MAJOR TASK:**

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Assist (as needed) the HP II Dose Calculator to ensure forward calculations are performed. When required, perform specialized calculations.

**SPECIFIC TASKS:**

**HOW:**

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1. Assist (as needed) the HP II Dose Calculator to ensure forward calculations are performed. When required, perform specialized calculations.

- 1a. Use the following as needed:

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**HELP**

TSC Dose Assessment Flowcharts  
See TAB 14

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**HELP**

Meteorological Data Acquisition  
See TAB 9

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**HELP**

Vent Monitor Data Acquisition  
See TAB 10

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**HELP**

MIDAS Operation  
See TAB 11

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**NOTE:**

Instructions for obtaining vent data from PICSY are contained in TAB 9. This is the preferred method for obtaining vent data. If PICSY is unavailable, consult TAB 10 for vent monitor data acquisition. Chemistry assistance is recommended if vent data is acquired from the SPING control terminals.

**SPECIFIC TASKS:**

**HOW:**

**NOTE:**

If difficulties are encountered or PICSY/SPING data is suspect, Inform the RPC and request assistance from the Chemistry Coordinator. Initiating PAVSS and replacing "SPING" channels are tasks which must be performed by qualified chemistry personnel.

- 1b. Use the default Noble Gas to Iodine ratio of 1,000 and the default Noble Gas to Particulate Ratio of 10,000 until Chemistry vent data is available.

**HELP**

TSC Dose Assessment Flowcharts  
See TAB 14

- 1c. Periodically evaluate PICSY vent release data:
- (1) Review measured/calculated dose ratios.
  - (2) Determine if low confidence (white) PICSY data exists.

**NOTE:**

"White" data is an indication of unreliable data. It may be normal and acceptable due to low or no flow in the SPING Monitor. It may also indicate a release exceeding the range of the instrument or an indication of instrumentation or computer interface problems.

**SPECIFIC TASKS:**

**HOW:**

1d. If PICSY vent totals are questionable:

- (1) Consult with Engineering to determine if condition is normal (i.e., per design) and if vent totals are valid from the Engineering or Dose Assessment perspective.
- (2) Request Engineering promptly pursue corrective actions, obtain Chemistry vent sample data, and/or evaluate need to switch vent monitoring to PAVSS.
- (3) Use appropriate alternate data such as grab sample (vent, PAVSS, HP air samples) results in Forward Calculation.

**- HELP**

TSC Dose Assessment Flowcharts  
See TAB 14 Page 4

2. Notify the Operations Shift Manager if doses are projected to exceed 1 rem TEDE or 5 rem Thyroid CDE.
- 2a. Discuss projection time with the RPC.
- (4) Ensure OSCAR is taking air samples as appropriate and is keeping their exposure ALARA.
- (5) Report conditions as a potential unmonitored or an unmonitored release as appropriate depending on measured to projected dose rate ratios.
- (6) Initiate Back Calculations if field data is available.

**NOTE:**

This may differ from the default projection time being used in the dose projection mode.



**SPECIFIC TASKS:**

**HOW:**

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2b. Consider the following:

- (1) Prognosis of event
- (2) Time to cooldown to <200 deg.
- (3) Duration & type of release
- (4) Weather forecasts
- (5) Protective measures already implemented
- (6) Release pathway - possible filtration and/or monitoring

**MAJOR TASK:**

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Manage OSCAR and other Field Monitoring Teams.

**SPECIFIC TASKS:**

**HOW:**

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1. Use the Health Physics Radioman to direct OSCAR and other Field Monitoring Team(s).

2. Ensure exposure of Field Monitoring Team personnel is maintained ALARA.

- 2a. Manage field teams such that the time spent in a plume is productive and minimized.
- 2b. Have field teams perform calculations or sample analysis in low background area.
- 2c. When field teams are not being used, ensure the team is in a low dose rate area.

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**- HELP**

Onsite Emergency Monitoring  
Locations  
See TAB 13

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- 2d. Obtain RPC approval for OSCAR to use respiratory protection when iodine cartridge from an air sample is  $\geq 1200$  cpm or RMS readings are greater than 1,000 mrem/hr Thy CDE. Protective clothing, and stay times based on plume activity should be evaluated.

**NOTE:**

Review RWP #8001 instructions regarding OSCAR activities.

**SPECIFIC TASKS:**

**HOW:**

**NOTE:**

Field monitoring teams other than OSCAR are not qualified to use respiratory protection. Their exposure to airborne radionuclides needs to be controlled via other means. RWP #8002 provides instructions regarding activities of field teams other than OSCAR.

2e. Consider the use of KI tablets if thyroid exposure approach or exceed 10 rem.

- (1) Contact RPC if KI is needed for OSCAR or other field team personnel.

**MAJOR TASK:**

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Validate existing dose calculations.

**SPECIFIC TASKS:**

**HOW:**

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|---|--|
| 1. Verify correct computer inputs.  | 1a. Review release rates, accident types, reactor mode switch, reactor shut down time, time of release, and weather conditions.  |
| 2. Compare OSCAR dose rate measurements to calculated dose rates. As time is available, compare dose rate measurements from other field teams to calculated dose rates at their monitoring locations. |  |
| 3. If there is significant difference try to resolve.   | 3a. Consider these actions:<br>(1) Have OSCAR (or other team) survey area to determine centerline.<br>(2) Compare SPING release rates against back calculated release rates.<br>(3) Consider meteorological changes. |
| 4. Report conclusions to RPC.   |  |

**MAJOR TASK:**

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Assess the plume characteristics.

**SPECIFIC TASKS:**

**HOW:**

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- |   |  |
|---|--|
| <p>1. Assess the plume using the following:</p> <ul style="list-style-type: none"><li>a. Elevation.</li><li>b. Width/centerline.</li><li>c. Direction.</li><li>d. What is causing the most dose: noble gas, iodine, or particulate?</li><li>e. Wind shifts.</li><li>f. Stability class.</li><li>g. Precipitation.</li></ul> | <p>1a. Evaluate the following:</p> <ul style="list-style-type: none"><li>(1) Measurements taken by OSCAR and other field teams.</li><li>(2) Meteorological data confirmed by OSCAR and other field team measurements.</li><li>(3) Is there particulate on the ground?</li><li>(4) Is thyroid or whole body exposure limiting?</li><li>(5) Weather forecasts or observed changes indicating a shift.</li><li>(6) Is the stability class or wind causing large or little dilution?</li><li>(7) Is the precipitation washing out contaminants in the air?</li><li>(8) Are inhabited structures affected such as gatehouse, EOF, STC, Energy Information Center, etc.?</li></ul> |
| <p>2. Assess what likely changes to the plume can increase or decrease dose rates.</p>  | <p>2a. Review the following considerations:</p> <ul style="list-style-type: none"><li>(1) Ventilation change (realignment or operation).</li><li>(2) Weather (stability, precipitation).</li><li>(3) Hold-up for decay rather than venting.</li></ul>  |
| <p>3. Report your assessment to RPC.</p>  |  |

**MAJOR TASK:**

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Notify the RPC of change in radiological condition that may trigger reclassification or a protective action recommendation.

**SPECIFIC TASKS:**

**HOW:**

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1. Notify the RPC when significant changes occur in:
  - a. Offsite release rates.
  - b. EPB/OSCAR dose rates.
  - c. Dose rates measured by other field teams.
  
2. Monitor calculation results and field measurement to determine if there is a need to reclassify or issue a protective action recommendation and then notify RPC.

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**HELP**

Emergency Classification  
See TAB 6

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**HELP**

Public Protective Action  
Recommendation Guide  
See TAB 7

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**MAJOR TASK:**

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Inform the RPC, then coordinate turning over calculations and Field Monitoring Team management to the EOF when approved.

**SPECIFIC TASKS:**

**HOW:**

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1. Talk to the EOF Dose Assessment Staffer.

- 1a. The EOF will contact the TSC Dose Calculator to determine status and other information concerning dose calculations. Provide any information requested.

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**HELP**

TSC to EOF Radiological Dose  
Assessment Phone Log  
See TAB 3

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- 1b. Coordinate time for turnover with the EOF staff:

2. Inform the RPC when the EOF is ready for turnover.
3. When the RPC approves time for turnover, work with the Dose Assessment Staff to coordinate transfer of dose calculations to the EOF.

**NOTE:**

Consider transmitting SPING data to the EOF.