Title: WATER SUMP DISCHARGES

2. Purpose (include purpose of SOP)
   To provide guidance in transferring sumps to the EWS and EWS to ensure MPC values are not exceeded while discharging.

3. Attach procedure to this form written according to the following format.
   A. Limitations and Precautions
      1. Nuclear Safety
      2. Environmental Safety
      3. Personnel Safety
      4. Equipment Protection
   B. Prerequisites
   C. Procedure

5. Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.
   (a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by
   (b) SOP is not valid after

6. (a) Is the procedure Nuclear Safety Related?
   If "yes", complete Nuclear Safety Evaluation. (See 2 of this Form)
   Yes ☐ No ☐

   (b) Does the procedure affect Environmental Protection?
   If "yes", complete Environmental Evaluation. (See 2 of this Form)
   Yes ☐ No ☐

   (c) Does the procedure affect radiation exposure to personnel?
   Yes ☐ No ☐

NOTE: All answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Station Superintendent/Unit Superintendent.

7. Review and Approval
   Approved - Shift Supervisor
   Rev. List members of PORC contacted

   Approved - Station Superintendent/Unit Superintendent

8. SOP is Cancelled
   Shift Supervisor/Shift Foreman Date

AP 1001
Figure 1001-8
Three Mile Island Nuclear Station
Special Operating Procedure

SOP No. 2-33

Date 5-1-79

Unit No. 1 & 2

NOTE: Instructions and guidelines in AP 1001 must be followed when completing this form.

Generated by V. C. C. Date 4/10/79

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Is the procedure Nuclear Safety Related?
If "yes", complete Nuclear Safety Evaluation. (See 2 of this Form)

Does the procedure affect Environmental Protection?
If "yes", complete Environmental Evaluation. (See 2 of this Form)

Does the procedure affect radiation exposure to personnel?

NOTE: All answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Station Superintendent/Unit Superintendent.
Water Sump disclosure 2-33

Environmental Impact Evaluation

Does this SOP:
(a) possibly involve a significant environmental impact? yes □ no □
(b) have a significant adverse effect on the environment? yes □ no □
(c) involve a significant environmental matter or question not previously reviewed and evaluated by the N.R.C. yes □ no □

Details of Evaluation
This procedure provides the guidance to ensure the sumps that are transferred to the SWPS and SWPS are within the MPC limits for discharges to the river.

Evaluation By: ___________________________ Date: __/____/____

*NOTE: If these questions are "yes", the change must receive N.R.C. approval.

Review
PORC review of evaluation is required only when requested by the Station Superintendent/Unit Superintendent. If this review is made, the PORC must consist of two off-site members.

1. ___________________________
2. ___________________________

Off Site Members: ___________________________ PORC Chairman Signature: ___________________________ Date: __/____/____

Approval
______________________________
Station Superintendent/Unit Superintendent: ___________________________ Date: __/____/____

______________________________
PORC Chairman Signature: ___________________________ Date: __/____/____

______________________________
Approval: ___________________________ Date: __/____/____
## Purpose

This SOP ensures that all station sump discharges to the Industrial Waste Treatment System are monitored and sampled to ensure that 10 CFR 20 HPC Values are not exceeded.

## limits and Precautions

2.1 The following Sump Pump Breakers will be maintained open unless associated sump levels dictate pump operation. Prior to breaker closure and subsequent transfer of liquid to IWTS, a grab sample must be taken and an isotopic analysis performed to ensure 10 CFR 20 HPC Values are not exceeded. In addition, permission to close sump pump breakers must be obtained from the Unit Superintendent or Gary H. Miller.

Caution Tags will be placed on each breaker referring to this SOP.

<table>
<thead>
<tr>
<th>Sump</th>
<th>Sump Pump</th>
<th>Breaker Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1 Turbine Room Sump IWTS</td>
<td>SD-P-5</td>
<td>IDTPHCC Unit 1C</td>
</tr>
<tr>
<td></td>
<td>SD-P-2A</td>
<td>IDTPHCC Unit 1C</td>
</tr>
<tr>
<td></td>
<td>SD-P-2D</td>
<td>IDTPHCC Unit 1E</td>
</tr>
<tr>
<td>Unit 1 Auxiliary Boiler Blowdown Sump IWTS</td>
<td>SD-P-10A</td>
<td>1ATPHCC Unit 4D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1ATPHCC Unit 4D</td>
</tr>
<tr>
<td>Unit 1 Powless Sump IWFS</td>
<td>SD-P-1A</td>
<td>2-J1A Unit 3R</td>
</tr>
<tr>
<td></td>
<td>SD-P-1D</td>
<td>2-J1A Unit 9C</td>
</tr>
<tr>
<td>Unit 2 Turbine Bldg. Sump IWTS</td>
<td>SD-P-13A</td>
<td>2-37 Unit HN1</td>
</tr>
<tr>
<td></td>
<td>SD-P-13B</td>
<td>2-47 Unit JH2</td>
</tr>
<tr>
<td>Unit 2 Tendon Gallery Sump IWTS</td>
<td>SD-P-9A</td>
<td>2-37 Unit EG1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-47 Unit GI12</td>
</tr>
<tr>
<td>Unit 2 Control &amp; Service Bldg. Sump IWTS</td>
<td>SD-P-9A</td>
<td>2-37 Unit EG1</td>
</tr>
<tr>
<td></td>
<td>SD-P-3A</td>
<td>2-37C Unit 4B</td>
</tr>
<tr>
<td></td>
<td>SD-P-3D</td>
<td>2-41C Unit 5C</td>
</tr>
<tr>
<td>Unit 2 Control Bldg. Area Sump IWTS</td>
<td>SU-P-10A</td>
<td>2-11EC Unit 1FR</td>
</tr>
<tr>
<td></td>
<td>SD-P-10B</td>
<td>2-11EC Unit 3CB</td>
</tr>
<tr>
<td>Unit 2 Diesel A Sump IWTS</td>
<td>SU-P-10C</td>
<td>2-211C Unit 2FF</td>
</tr>
<tr>
<td></td>
<td>SD-P-10D</td>
<td>2-211C Unit 2FF</td>
</tr>
<tr>
<td>Unit 2 Diesel B Sump IWTS</td>
<td>WT-P-16A</td>
<td>2-21A Unit 5E</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-21A Unit 10E</td>
</tr>
<tr>
<td>Unit 2 Pretreatment Sludge Collection Sump IWFS</td>
<td>WT-P-16B</td>
<td>Pretreatment MCC Unit 2C</td>
</tr>
<tr>
<td>Unit 1 Pretreatment Sump IWFS</td>
<td>WT-P-24A</td>
<td>Pretreatment MCC Unit 2D</td>
</tr>
<tr>
<td></td>
<td>WT-P-24B</td>
<td></td>
</tr>
</tbody>
</table>
Note: Controls for Unit 1 Pretreatment Dual Gravity Filter Backward Flow Skimmers and Sludge Collectors are not included in this procedure since it could cause undue interruption of Pretreatment System operation. These devices are monitored at the INFS Filtration System.

2.2 Immediately following sump pump-down open the associated breaker.

2.3 Grab Samples will be obtained every two hours at the Industrial Waste System complex and Isotopic Analysis performed to ensure release limits are not exceeded. Samples will be obtained at effluent sample points 104 and 107. Results will be kept in the Water Sample Log Book.

3.0 Prerequisites

3.1 One of the following sump levels is high and contents must be pumped to the INFS or IMFS.

Unit 1 to INFS
- Turbine Room Sump
- Auxiliary Boiler Blowdown Sump

Unit 2 to INFS
- Turbine Building Sump
- Tender Gallery Sump
- Control & Service Bldg. Sump
- Control Bldg. Area Sump
- Diesel A Sump
- Diesel B Sump

Unit 1 to IMFS
- Unit 1 Pretreatment Sump
- Powders Sump

Unit 2 to IMFS
- Unit 2 Pretreatment Sludge Collection Sump

3.2 The sump to be pumped down has had an isotopic analysis performed on a sample of the contents and it is known not to contain concentrations of radionuclides in excess of 10 CFR 20 NRC limitations taking into account total plant effluent flow.

3.3 Sump analysis results will be maintained by the Shift Foreman in the Water Sample Log Book in Unit I Control Room.

4.0 Procedure

4.1 Ensure Shift Foreman has obtained results of sump contents isotopic analysis and sum of the ratio of radionuclides is less than 1.0 at the river. Use Sump Pump Discharge Flow Rate and Effluent Flow Rate to determine dilution factor. See Attachment.
4.2 Obtain permission from the Unit Superintendent or Gary F. Hiller to close the respective sump pump breakers.

4.3 Close the sump pump breakers and allow the pumps to draw down the water level as low as possible.

4.4 Open the respective sump pump breakers.

4.5 Notify Control Room to log the time and approximate volume of the transfer on the associated analysis sheet. Sump Pumping Data Sheet - Attachment A

4.7 Attempt to identify and isolate the source and cause of all isotopic analysis high concentration indications.
$I^{131}$ (uc./cc) : Concentration of $I^{131}$ found in sample.

$\frac{I^{131}}{I^{131}\text{To river (uc./cc)}}$ : 

\[ \frac{I^{131}\text{To river (uc./cc)}}{D. F^*} \]

$\frac{I^{131}}{I^{131}\text{To river (uc./cc)}}$ : Fraction of MPC

\[ \frac{I^{131}\text{To river (uc./cc)}}{\text{MPC for } I^{131} \text{ in water}} \]

10CFR20, Table 2, Column 2

Combined Fraction of MPC : The sum of all the MPC fractions being discharged to the sewer to the JEVIS (JEPAS), the river.

If $\geq 1.0$ do not discharge.

\[ \sum \text{Discharge} \]

$D. F = \frac{\text{Station Discharge} \times 2}{1500 \text{ gpm}}$ 

where station discharge equals station effluent.
SUMP PUMPING DATA SHEET

<table>
<thead>
<tr>
<th>SUMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>I WTS</td>
</tr>
<tr>
<td>I WFS</td>
</tr>
<tr>
<td>SUMP LEVEL BEFORE</td>
</tr>
<tr>
<td>TIME</td>
</tr>
<tr>
<td>DATE</td>
</tr>
</tbody>
</table>

SOURCE OF WATER TO SUMP

PERMISSION GRANTED TO PUMP

SHIFT SUPERVISOR

| SUMP LEVEL AFTER |
| TIME |
| DATE |