(UNIT 1 & 2)

NRC ~~NRC~~ [signature] 5/3/79

NRC

AP 1001
Figure 1001-8

Three Mile Island Nuclear Station (REV 1)
Special Operating Procedure

CONSIDER [illegible]

SOP No. Z-33
(From SOP Log Index)

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

Unit No. 1 & 2

Date 5-1-79

1. Title WATER SUMP DISCHARGES

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

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

Attached MSO

4. Generated by [signature: H. C. Crawford] Date 4/30/79

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 N/A ☐
     (Fill in circumstances which will result in SOP being cancelled)

6. (a) Is the procedure Nuclear Safety Related?
   If "yes", complete Nuclear Safety Evaluation. (Side 2 of this Form) . . . . Yes ☐ No ☒
   (b) Does the procedure affect Environmental Protection?
   If "yes", complete Environmental Evaluation. (Side 2 of this Form) . . . . Yes ☒ No ☐
   (c) Does the procedure affect radiation exposure to personnel? . . . . Yes ☐ No ☒

NOTE: If 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~~ Not true
NRC Did not wish to review 5/4/79 MSO

Approved – Shift Supervisor [signature: J. Ross] 5/1/79 Date

Reviewed – List members of PORC contacted
[signature: R. C. Noll] 5/1/79 Date
JE Morck 5/1/79 [signature: R.W. Benson] 5/1/79 Date
HC Crawford 5/1/79 [signature: J. Collins] 5/1/79 Date
V.T. Orlandi 5/1/79 [signature] 5/1/79 Date
[signature] 5/1/79
IW NA
[illegible]

Approved Station Superintendent/Unit Superintendent [signature] 5/1/79 Date

8. SOP is Cancelled

______ Shift Supervisor/Shift Foreman ______ Date

"EVALUATION"

SP-1001 | Three Mile Island Nuclear Station | SIDE 2

igure 1001-8 | Nuclear Safety/Environmental Impact Evaluation | SOP No. _____

1. Title Water Sump Discharges Z-33 (Rev 1)

2. Nuclear Safety Evaluation

Does this SOP:

*(a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? . . . . . yes☐ no☐

*(b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report? . . . . . yes☐ no☐

*(c) reduce the margin of safety as defined in the basis for any technical specification? . . . . . yes☐ no☐

Details of Evaluation (Explain why answers to above questions are "no". Attach additional pages if required.)

Evaluation By _____ Date _____

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 transfered to the IWTS and IWFS are within the MPC limits for discharging to the river.

Evaluation By H E Crawford Date 4/30/79

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

4. 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

5. Approval

[signature] 5/1/79 | [signature] | 5/1/79

Station Superintendent/Unit Superintendent | Date

1.0 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 MPC Values are not exceeded.

2.0 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 MPC Values are not exceeded. In addition, permission to close sump pump breakers must be obtained from the ~~Unit Superintendent or Gary P. Miller~~. Caution Tags will be placed on each breaker referring to this SOP.

— above ones Table 1 Column 2

& Shift Supervisor

	Sump	Sump Pump	Breaker Location
Unit 1	Turbine Room Sump	SD-P-5	IDTPMCC Unit 1E
	IWTS	SD-P-2A	ICTPMCC Unit 1C
		SD-P-2B	IDTPMCC Unit 1E
Unit 1	Auxiliary Boiler Blowdown Sump	SD-P-10A	Local at pump
	IWTS	SD-P-10B	Local at pump
Unit 1	Powdex Sump	SD-P-1A	1ATPMCC Unit 4D
	IWTS	SD-P-1B	1BTPMCC Unit 4D
Unit 2	Turbine Bldg. Sump	SD-P-1A	2-31A Unit 3B
	IWTS	SD-P-1B	2-41A Unit 9C
Unit 2	Tendon Gallery Sump	SD-P-13A	2-37 Unit HG3
	IWTS	SD-P-13B	2-47 Unit JH2
Unit 2	Control & Service Bldg. Sump	SD-P-9A	2-37 Unit EG1
	IWTS	SD-P-9B	2-47 Unit GH2
Unit 2	Control Bldg. Area Sump	SD-P-3A	2-31C Unit 4B
	IWTS	SD-P-3B	2-41C Unit 5C
Unit 2	Diesel A Sump	SD-P-10A	2-11EC Unit 3FB
	IWTS	SD-P-10B	2-11EC Unit 3CB
Unit 2	Diesel B Sump	SD-P-10C	2-21EC Unit 2EF
	IWTS	SD-P-10D	2-21EC Unit 2FF
Unit 2	Pretreatment Sludge Collection Sump	WT-P-16A	2-41A Unit 5E
	IWFS	WT-P-16B	2-31A Unit 10E
Unit 1	Pretreatment Sump	WT-P-24A	Pretreatment MCC Unit 2C
	IWFS	WT-P-24B	Pretreatment MCC Unit 2D

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 discharges are monitored at the IWTS Filtration System ~~overboard~~.

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 IWTS or IWFS.

Unit 1 to IWTS	Unit 1 to IWFS
Turbine Room Sump	Unit 1 Pretreatment Sump
Auxiliary Boiler Blowdown Sump	Powdex Sump

Unit 2 to IWTS	Unit 2 to IWFS
Turbine Building Sump	Unit 2 Pretreatment Sludge Collection Sump
Tendon Gallery Sump	
Control & Service Bldg. Sump	
Control Bldg. Area Sump	
Diesel A Sump	
Diesel B Sump	

Table 2 column 2

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 MPC limitations taking into account total plant effluent flow. See ATTACHMENT 1

3.3 Sump analysis results will be maintained by the Shift Foreman in the Water Sample Log Book in Unit 1 Control Room.

4.0 Procedure

~~4.1 Ensure sample taken~~

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 1

4.2 Obtain permission from the ~~Unit Superintendent or Gary P. Miller~~ Shift Supervisor 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 2

~~4.6 Report transfer information to SUMP COORDINATOR.~~ N/A

4.7 Attempt to identify and isolate the source and cause of all isotopic analysis high concentration indications.

ATTACHMENT 1

I^{131} (uc./cc) : Concentration of I^{131} found in sample.

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

2.

$\frac{I^{131}}{MPC}$: $\frac{I^{131}\text{ To River (uC/cc)}}{\text{MPC for } I^{131} \text{ in water}}$ Fraction of MPC

10CFR20, Table 2, Column 2

Combined Fraction of MPC : The sum of all the MPC fractions being discharged to the [redacted] river

If > 1.0 do not discharge the sump to the SWTS (IWFS).

* D.F = $\frac{\text{Station Discharge}}{150\text{ gpm}}$ where station discharge equals Station Effluent

SUMP WATER SAMPLE ANALYSIS AND CALCULATIONS

PRESENT Date	PRESENT Time	SAMPLE TAKEN DATE	SAMPLE TAKEN TIME	Stn. Disch. ($gpm \times 10^3$)	Sump Disch. (gpm)	DF	I 31 (uCi/cc)	I-13 to river (uCi/cc)	I-131 / MPC		Combined Fraction of MPC	System Disch. yes/no
					150							

Attachment 2

SUMP PUMPING DATA SHEET

SUMP _____

IWTS / IWFS SUMP LEVEL BEFORE _____ TIME _____

DATE _____

SOURCE OF WATER TO SUMP

PERMISSION GRANTED TO PUMP _____

Shift Supervisor

IWTS / IWFS SUMP LEVEL AFTER _____ TIME _____

DATE _____