1776
Revision 2
02/16/78

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THREE MILE ISLAND NUCLEAR STATION
STATION HEALTH PHYSICS PROCEDURE 1776
SAMPLING OF UNMONITORED POTENTIAL RADIOACTIVE RELEASE PATHS

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| 23.0 | | | 48.0 | | | 73.0 | | |
| 24.0 | | | 49.0 | | | 74.0 | | |
| 25.0 | | | 50.0 | | | 75.0 | | |

Unit 1 Staff Recommends Approval
Approval R W Dubiel Date 2/13/78
Cognizant Dept. Head

Unit 2 Staff Recommends Approval
Approval R W Dubiel Date 2/13/78
Cognizant Dept. Head

Unit 1 PORC Recommends Approval
NA Date —
Chairman of PORC

Unit 2 PORC Recommends Approval
NA Date —
Chairman of PORC

Unit 1 Superintendent Approval
J. P. O'Hanlon Date 2/14/78

Unit 2 Superintendent Approval
J. J. Colitz Date 2/16/78

Manager Generation Quality Assurance Approval NA Date —

THREE MILE ISLAND NUCLEAR STATION

STATION HEALTH PHYSICS PROCEDURE 1776

SAMPLING OF UNMONITORED POTENTIAL RADIOACTIVE RELEASE PATHS

1.0 PURPOSE

This procedure identifies the unmonitored liquid releases from Three Mile Island and outlines the sampling program employed to ensure that no radioactivity is discharge via these routes.

2.0 DISCUSSION

2.1 Liquids discharged to the Susquehanna River which are likely to contain low levels of radioactivity are monitored by either RM-L7 or RM-L8 and WDL-R-1311. There are other liquid releases to the river which are not monitored by any of these monitores because the likelihood of radioactive contamination in these liquid discharges is highly remote. Nevertheless, these releases are sampled once a month for gross beta activity. These liquid releases are as follows:

1. Emergency River Water Dump to the Middle Channel (if conditions require)
2. Yard Drains Discharge to East Channel
3. Station Sewage

3.0 REFERENCES

4.0 EQUIPMENT

4.1 Liter Polyethylene Bottles

4.2 Bechman Wide Beta II

5.0 OPERATING INSTRUCTION

5.1 Unmonitored liquid release paths as indicated on Form #1776-1 will be sampled monthly.

5.2 Each sample will be analyzed for gross Beta activity as per PCP 1950.

5.3 When the corrected counts exceed the background count by the minimum detectable count rate (MDCR) a gamma isotopic analysis will be performed to determine the source of the radioactivity as per PCP 1958.

5.4 MDCR is defined as:

$$MDCR = 3\sqrt{\frac{\text{Background counts per minute}}{\text{Count Time}}}$$

5.5 Sampling Unmonitored Liquid Releases

5.5.1 Industrial Waste System

5.5.1.1 Collect a one (1) liter sample.

5.5.1.2 Take sample to the laboratory for analysis as per PCP 1950.

5.5.1.3 Record data on Form 1776-1.

5.5.2 Powdex System (Unit #1)

5.5.2.1 Collect a one liter sample from the sump under the Powdex System.

5.5.2.2 Take the sample to the laboratory for analysis as per PCP 1950.

5.5.2.3 Record data on Form 1776-1.

5.5.3 Sewage System

5.5.3.1 At the sewage treatment plant, collect a one liter sample (liquid) from either the airation tanks or holding tank.

5.5.3.2 Take the sample to the laboratory for analysis as per PCP 1950.

5.5.3.3 Record data on Form 1776-1.

5.5.4 Yard Drains to East Channel

5.5.4.1 Collect a one liter sample at the yard drains discharge point to the Susquehanna River located due east of Unit 2 cooling tower "A".

5.5.4.2 Take sample to the laboratory for analysis as per PCP 1950.

5.5.4.3 Record data on Form 1776-1.

5.5.5 Emergency Discharge to East Channel

5.5.5.1 In the event that the 48" river water dump pipe becomes blocked, pressure will mount forcing the water through a 10 foot loop leading to the emergency dump to the east channel of the Susquehanna River.

5.5.5.2 Discharge location to the east channel is between cooling towers "1B" and "2A".

5.5.5.3 If such conditions should exist, the water discharged to the east channel will be sampled daily.

5.5.5.4 Collect a one liter sample at the location mentioned in step 5.1.5.2.

5.5.5.5 Take sample to the laboratory for analysis as per PCP 1950.

5.5.5.6 Record data on Form 1776-1.

5.5.6 Turbine Building Air Sample (Unit #1)

5.5.6.1 Once per month a continuous air sample for a 24 hour period will be taken in the Turbine Building elevation 380'.

5.5.6.2 Take the sample to the laboratory for analysis as per HPP 1605 and 1606.

5.5.6.3 Record data on Form 1776-1.

5.5.7 Turbine Building Air Sample (Unit 2)

5.5.7.1 Once per month a continuous air sample for a 24 hour period will be taken in the Turbine Building elevation 330'.

5.5.7.2 Take the sample to the laboratory for analysis as per HPP 1605 and 1606.

5.5.7.3 Record data on Form 1776-1.

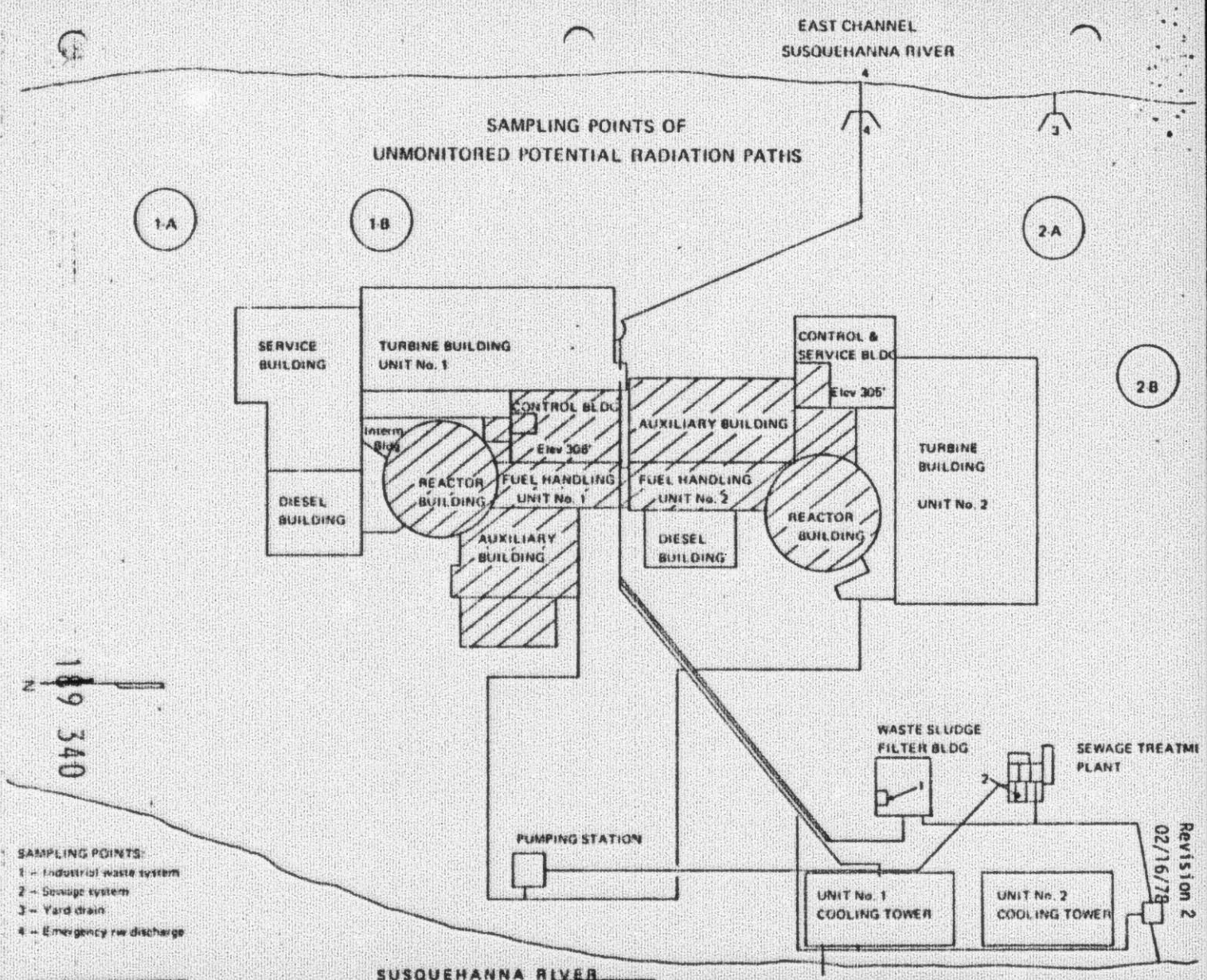
# SAMPLING OF UNMONITORED POTENTIAL

# RADIATION PATHS (UNIT #1 & #2)

Month/Year: _____

| Sample Location | Activity (uCi/cc) | Remarks |
|---|---|---|
| Industrial Waste System | | |
| Powdex System | | |
| Sewage System | | |
| Yard Drains | | |
| Emergency Disch. To East Dike | | |
| | | |
| Turbine Bldg. Airborne Unit #1 | | |
| Turbine Bldg. Airborne Unit #2 | | |

Form 1776-1


EAST CHANNEL
SUSQUEHANNA RIVER
SAMPLING POINTS OF
UNMONITORED POTENTIAL RADIATION PATHS
1-A
1-B
2-A
2-B
SERVICE BUILDING
TURBINE BUILDING UNIT No. 1
CONTROL & SERVICE BLDG
Elev 305'
CONTROL BLDG
Elev 306'
Interim Bldg
AUXILIARY BUILDING
REACTOR BUILDING
FUEL HANDLING UNIT No. 1
FUEL HANDLING UNIT No. 2
DIESEL BUILDING
AUXILIARY BUILDING
DIESEL BUILDING
REACTOR BUILDING
TURBINE BUILDING UNIT No. 2
WASTE SLUDGE FILTER BLDG
SEWAGE TREATMENT PLANT
PUMPING STATION
UNIT No. 1 COOLING TOWER
UNIT No. 2 COOLING TOWER
SUSQUEHANNA RIVER
SAMPLING POINTS:
1 – Industrial waste system
2 – Sewage system
3 – Yard drain
4 – Emergency ew discharge
N
169 340
6.0
Figure 1776-1
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TMI DOCUMENTS

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Wilda R. Mullinix, NRC

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