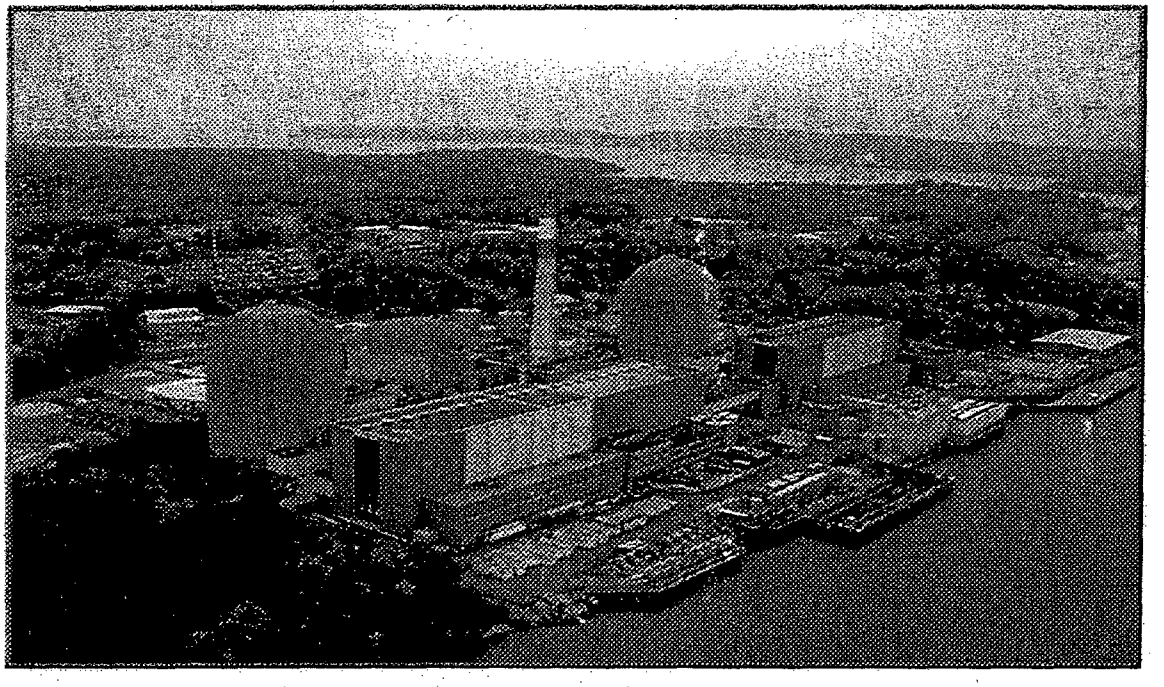
Entergy

Indian Point Energy Center

IPEC I. E. Bulletin 80-10 Program

REV 0



Written By:

1/31/6

Writer / Date

Reviewed By:

1/31/06

Reviewer / Date

Recommended for Approval by:

1/31/06

Chemistry Superintendent / Date

Executive Summary

The IPEC 80-10 program has been defined in many procedures and commitment letters to the NRC since the issuance of the I.E. Bulletin in 1980. This document provides a comprehensive program description to draw together the individual components of the program. The purposes of this effort include:

- To provide a means to identify the scope of the entire program
- To provide a means to manage the site's sampling protocol
- To provide a mechanism to keep the commitments current
- To simplify inspections and assessments of the program
- To verify sufficient preparation of succession planning.

Compliance with I.E. Bulletin (Generic Letter) 80-10 requires a continuously re-evaluated program. Therefore, this document is periodically updated to reflect changes or additions to the program, and to accommodate modernizations of the original intent.

The Chemistry Superintendent, or his designee, is responsible for the 80-10 program. These duties include ensuring that all required actions from the I..E. Bulletin are captured in station procedures. This plan provides a central location to establish the bases for these procedures. While the Chemistry Department is responsible for the program, other departments may play supporting roles in ensuring complete compliance. For example, surveys by Health Physics may initiate further action by Chemistry (sampling, monitoring) and eventually suggest long-term inclusion into this program. The Chemistry organization shall serve as the central focal point to ensure overall site compliance with the Bulletin.

Compliance with the 80-10 program is the subject of inspections by both in-house and outside regulators on a regular basis. This document shall serve as a starting point for these inspections, to assist in defining the program boundaries.

The site's 80-10 program is subject to continuous improvement and is among other programs that will be periodically evaluated for potential update under the QA and assessment programs, both onsite and external.

TABLE OF CONTENTS

1.0 INTRODUCTION and HISTORY 4

1.1 Storm Drains and Monitoring Wells 6
1.2 Station Reorganization 7
1.3 New Station Procedures 8

2.0 IMPLEMENTING PROCEDURES 8

3.0 REQUIRED EVALUATIONS FOR EFFLUENT IMPACT 9

4.0 REFERENCES 10

5.0 ATTACHMENTS 10

5.1 NRC I.E. Bulletin 80-10 (SSINS No.: 6820) to Power Authority 101
5.2 Indian Point 2 Initial Sampling Commitments 10
5.3 Indian Point 3 Initial Sampling Commitments 10

1.0 INTRODUCTION and HISTORY

In May, 1980, the NRC distributed a generic letter to all licensees requiring a written response to the auxiliary boiler contamination incident at Brunswick Nuclear Facility in early 1980. The letter was entitled I.E. Bulletin 80-10, "Contamination of Non-radioactive System and Resulting Potential for Unmonitored, Uncontrolled Release to the Environment".

> *At Brunswick, the aux boiler was used to heat waste water in a concentrate tank. Contaminated water siphoned back into the aux boiler after cooling and condensation. Other leaks in the aux steam system contributed to contamination in the boiler. Due to increased levels of contamination, proper chemistry control and blowdown of the boiler were severely impaired. As a result, a boiler tube failure occurred and caused approximately 100 millicuries of radioactive material to be released from the system to the environment, as steam from the boiler. Increased Cesium and activation products were detected downwind of the site.*

As a result of this incident, the NRC required licensees to review facility design and operation to identify systems that are considered nonradioactive, but could become radioactive through interfaces with other systems. The following systems were specifically identified as requiring investigation:

- Aux boiler systems
- Demineralized water systems
- Isolation condensers
- PWR secondary water cleanup (polishers)
- Instrument air systems
- Sanitary Sewage

Routine sampling and analysis programs were required to be in effect for these and other systems to preclude unmonitored, uncontrolled releases, including releases to on-site leach fields or retention ponds.

Furthermore, the letter included guidance for licensee action, should these systems become contaminated. Further use of the system was restricted until the cause of the contamination was identified and corrected, and the system decontaminated, which was required as soon as possible. A review (per 10CFR50.59) was required to continue operation of a contaminated system to mitigate the extent of the radioactive release, to aid in demonstrating that 10CFR20, Technical Specifications, and 40CFR190 limits were not impacted.

Should this review result in no unreviewed safety concern, nor any changes to the Technical Specifications, the licensee was required to amend site procedures and instrumentation as required to ensure all releases are monitored and in compliance with ALARA per the General Design Criteria, 10CFR20, 10CFR50 Appendix I, and the Technical Specifications.

If the review concluded that an unreviewed safety question remained, or a change to the facility Technical Specifications was required, the effected contaminated system was NOT to be operated without prior NRC approval.

The NRC gave licensees 45 days to respond in writing with regard to identification of effected systems, and what we intended to do regarding any unresolved items discovered.

In the early 80's a final commitment letter was prepared (independently) from both units 2 and 3, identifying the specific sampling and monitoring periodicities in table form (Attachments 2 and 3). After the initial correspondence from both Con Edison and Power Authority State of New York, the programs were modified and improved on an ongoing basis at Indian Point, through repeated commitment letters to the NRC through the late 1980s and beyond. Pathways effected were included in various station procedures (RE-CS-021 at IP3 and IPC-S-012 at IP2).

> In some cases, additional hardware was purchased, installed, and implemented (generally in the form of a radiation monitor or other instrumentation). For the most part, however, the program involved an extensive sampling schedule to ensure the effected pathways were "monitored". Radiation monitors were installed on site sewage and the aux condensate return lines from steam from the primary aux buildings.

Letters to the NRC continued throughout the 1980s to update and define the program at both Indian Point plants. In May, 1985, Rad Engineering's memo to station management at IP3 summarized progress to date and a trigger level for any contamination event of 2 milli-curies of liquid discharged per year requiring further investigation by Chemistry (10CFR50.59 and inclusion in the annual effluent report). The letter included detailed lists of all systems effected and how they were monitored. This information was captured in site Admin and Chemistry procedures (AP-25.2 and RE-CS-021, Radioactive Sample Schedule).

In 1982, as a result of inspection #50-247/81-17, unit 2 sent a response to the NRC which included a table of systems and sampling requirements for 80-10 compliance. Further communication and procedural updates continued to better define the 80-10 program, most of which was captured in IPC-S-012 which later became 2-CY-2625, General Plant Systems, Specifications and Frequencies.

At this time (mid 1980s), storm drain sludge was identified as a component of the 80-10 program. The action levels were defined in Chemistry procedures at IP3 such that an investigation was required if gamma activity in the sludge (sediment) exceeded 3E-6 uCi/gm of plant-related nuclides, or if the ratio of Cs-137/Cs-134 was less than 6.0, indicating new contamination. These criteria were used to determine proximity to the 2 milli-curie per year threshold and the need to include potential releases from effected pathways in the annual effluent report.

Initially, there was no discussion of Tritium, nor any requirement to sample or monitor the water in the storm drains. Similarly, there were no commitments, nor any discussions regarding monitoring wells, because the site was established in both FSARs as having no effective potable water pathway. There was a required weekly sample from the sewage treatment plant, as Indian Point was operating a BOD-5 plant through 1989. After the site sewage was directed to the Village of Buchanan, weekly samples continued as a commitment to the village. In addition to several installed radiation monitors.

Site Administrative and Chemistry procedures were applied and revised periodically throughout the 1990s as a result of Operational Experience, benchmarking, and direct involvement with the Region One RETS-REMP organization, which helped keep the programs at Indian Point current.

After 2000, when Entergy purchased the site and eventually consolidated all three units, procedures were again updated and combined. During this evolution, differences in the unit 2 and unit 3 programs suggested further review of the overall program. In particular, the storm drain systems were monitored with significantly different methods.

1.1 Storm Drains and Monitoring Wells

At unit 3, Chemistry maintained the program such that all effluent drains and many upstream sources were monitored annually, with random sampling of sediment in many drains broken down on a quarterly basis. The manways were physically entered to extract sediment as well as water samples, but until 2004, analyses of this material included only gamma spectroscopy. A test for tritium in the water was added in 2004.

At unit 2, the program was run by Health Physics, under a procedure entitled "Routine Surveys Outside the Normal RCA". Water and sediment were tested annually in many drains identified as an attachment to the Health Physics procedure. After gamma spectroscopy, many of the annually tested water samples were tested for tritium by liquid scintillation.

In February, 2000, unit 2's SG Tube Rupture event drove an awareness of tritium contamination on site, and the 80-10 program seemed to expand to cover tritium in ground water and storm drains. This increased scope was not initially evaluated as part of the same 2 milli-curie trigger level and required further investigation.

In late 2005, the discovery of trace levels of tritium in ground water (especially in the transformer yards of both units) led to the addition of many monitoring wells on site, and along with increased storm drain sampling, greatly augmented the 80-10 program. Individual procedures for storm drain monitoring are to be merged into an IPEC procedure, and a Monitoring Well program is being established. While these programs are massive in scope, they are initially being grouped with the 80-10 program, pending potential development of a complete and separate program in preparation of site decommissioning (10CFR50.75G).

Several environmental impact determinations and bounding calculations were performed to ensure the tritium discovered in these systems did not approach significant reporting levels (they remain 0.1% or less of routine effluents). Vendor assistance was employed to verify the staff's calculations of impact from ground water at bedrock level, and to determine a viable dilution factor for these releases. These analyses will be referenced in ongoing procedures and will be used as starting points in further similar investigations as the storm drain and monitoring well programs evolve.

1.2 Station Reorganization

During the decades prior to site consolidation and Entergy's purchase, the 80-10 program at both sites was comprised of procedural requirements for sampling or monitoring, based on an ongoing process of communication with the NRC as to the implementation of the I.E. Bulletin. There was inconsistent application of the necessary record-keeping from groups which may or may not have understood the significance of the data they were collecting. There was little effort to define the entire program in a summary document, and certainly no effort to combine ideology or protocol between units 2 and 3.

In late 2004, Chemistry became the central focal point for administering the site's 80-10 program, taking over previous duties from other groups (unit 2). Historical data from other groups was gathered to accumulate as much history as possible and incorporated in Chemistry's records.

All available historical records of radiochemical analytical results were entered into the Chemistry Database Management System (WinCDMS). In comparing methods and practices between the units, new sampling and monitoring protocols were evaluated for some systems, to be incorporated in new IPEC programs, policies, and procedures. These improvements are ongoing as the station continues to consolidate and improve from lessons learned.

1.3 New Station Procedures

Procedures identifying the elements of the 80-10 program had been separately managed by different staff members, and sometimes split among different work groups on site. The movement of the entire program to Chemistry included a significant effort to update, cross-reference, or sometimes develop new procedures for this purpose.

Currently, all 80-10 related sample schedules are identified in station procedures as defined in the next sections. Historical references to commitment letters are maintained in the central files and referenced within the procedures. While there are still several different procedures that are used to carry out the elements of the program, the Chemistry Database Management System (WinCDMS) includes a group definition to collect each unit's data for review. Trigger or action levels are imbedded into the database, as well as referenced in the procedures.

Along with this program description document, these improvements allow for a more universal (and portable) means of managing the entire 80-10 program at IPEC.

2.0 IMPLEMENTING PROCEDURES

Station procedures cover the sampling methods, frequencies, specifications, and action levels for 80-10 sampling, in a similar fashion to all other Chemistry specifications. Tables within the procedures to follow identify system, parameter, frequency of sample, specification, and notes to define and help manage the program. Most of the management work, however, originates from the Chemistry database of sample results (WinCDMS).

The following procedures, each contributing to the 80-10 program, are in place at IPEC:

Procedure number, name	Purpose
2-CY-2625, General Plant Systems Specifications, & Frequencies	Sample schedule for many unit 2 systems. Those relating to 80-10 are identified as such.
3-CY-2325, Radioactive Sampling Schedule	A similar procedure for unit 3, again with 80-10 related systems designated by a footnote, which identifies the big picture investigation to follow any analysis result above its defined trigger level.
0-CY-1510, Storm Drain Sampling	This combined procedure covers all site drains, their sample periodicity, and action levels.

3.0 REQUIRED EVALUATIONS FOR EFFLUENT IMPACT

The bulletin requires an evaluation when there is continued activity in any system covered by this program. Generally, a trigger level is established, below which, continue operation (and monitoring) is unabated. However, per the earlier section defining this I.E. Bulletin, should the safety evaluation suggest that the activity identified in any pathway represents an unreviewed safety concern , change the Technical Specifications, or challenge licensing basis criteria (GDCs, 10CFR20, 10CFR50, 40CFR190, etc) the system cannot be operated with NRC prior approval.

These criteria require an evaluation of 80-10 systems be performed for impact on release limits. A value certain to be below regulatory compliance levels (or effluent significance) is established in station procedures and memorandums kept on file. Periodically, specific evaluations are performed for effluent significance to ensure these trigger levels are up to date, and to assist in the effluent program required reports.

An impact evaluation conducted at Unit 3 resulted in a determination of a 2 mCi per year threshold, and subsequent back-calculated concentrations in effected systems. This work, however, involved gamma emitters, and in the future, a similar threshold value is required for H-3 determinations, especially in storm drains and monitoring wells.

> Initial evaluations at the time of discovery of tritium in ground water in late 2005 clarified no effluent impact from the identified H-3, but an on-going program for these systems is still in development. When it is complete, a concentration threshold will be established for future guidance with respect to proximity of routine effluent contribution, as well as Appendix I limits. While the I.E. Bulletin requires this comparison to offsite dose limits, it is important to also compare the resulting curies and dose to existing levels for a determination of relative significance.

4.0 REFERENCES

4.1 I.E. Bulletin 80-10, "Contamination of Non-radioactive System and Resulting Potential for Unmonitored, Uncontrolled Release to the Environment".

4.2 Letter from D. Quinn to J. Russell, May, 1985, status of 80-10 action items.

4.3 Letter from D. Quinn to M. Kerns, March 1986, status of 80-10 action items.

4.4 IPEC-CHM-05-043, Initial Assessment of Tritium in Unit 2 Storm Drains.

4.5 CR-IP2-2005-02893, Required Turnover of Unit 2's Storm Drain Monitoring Program from Unit 2 Health Physics to IPEC Chemistry

4.6 CR-IP2-2005-05010, Preparation of a 80-10 Program Description Document

4.7 Voided (historical) Procedures:

IPC-S-012, Chemistry Specifications/Frequencies, Unit 2
RE-CS-021, Radiochemical Analysis Specifications and Frequencies, Unit 3
HP-SQ-3.013 Unit 2 Storm Drains
RE-CCI-022 Unit 3 Storm Drains

4.8 Current Procedures

0-CY-1510, Site Storm Drain Sampling
2-CY-2625, General Plant Systems, Specifications, Frequencies
3-CY-2325, Radioactive Sampling Schedule
3-CY-2625, General Plant Systems, Specifications, Frequencies

5.0 ATTACHMENTS

5.1 NRC I.E. Bulletin 80-10 (SSINS No.: 6820) to Power Authority State of NY
5.2 Indian Point 2 Initial Sampling Commitments
5.3 Indian Point 3 Initial Sampling Commitments

IPEC 80-26

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Docket No. 50-286

May 6, 1980

Power Authority of the State of New York
Indian Point 3 Nuclear Power Plant
ATTN: Mr. J. P. Bayne
Resident Manager
P. O. Box 215
Buchanan, New York 10511

Gentlemen:

The enclosed IE Bulletin No. 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release to Environment," is forwarded to you for action. A written response is required. If you desire additional information regarding this matter, please contact this office.

Sincerely,

for Boyce H. Grier
Director

POWER AUTHORITY
STATE OF NEW YORK
RECEIVED
MAY 9 1980
INDIAN POINT Unit No. 3 Operating Office

Enclosures:
1. IE Bulletin No. 80-10
2. List of Recently Issued IE Bulletins

CONTACT: J. Kinneman
(215-337-5221)

cc w/encls:
George T. Berry, Executive Director
C. M. Pratt, Assistant General Counsel
G. M. Wilverding, Licensing Supervisor
P. W. Lyon, Manager - Nuclear Operations
A. Klausmann, Director, Quality Assurance
D. Halama, Site Quality Assurance Engineer
J. F. Davis, Chairman, Safety Review Committee
J. M. Makepeace, Director, Technical Engineering (Con Ed)
W. D. Hamlin, Assistant to Resident Manager (PASNY)

ENCLOSURE I

SSINS No.: 6820
Accessions No.:
8002280677

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

IE Bulletin No. 80-10
Date: May 6, 1980
Page 1 of 2

CONTAMINATION OF NONRADIOACTIVE SYSTEM AND RESULTING POTENTIAL FOR UNMONITORED, UNCONTROLLED RELEASE OF RADIOACTIVITY TO ENVIRONMENT

Description of Circumstance

At the Brunswick Nuclear Facility, the auxiliary boiler was operated for an extended period of time with radioactively contaminated water in the boiler at levels up to 2×10^{-2} micro curies per milliliter. A tube leak in the firebox of the oil fired auxiliary boiler resulted in an unmonitored, uncontrolled release of radioactivity to the environment.

The initial contaminating event was caused by the use of a temporary heating hose from the auxiliary boiler to a radioactive waste evaporator concentrate tank. Upon cooling and condensation of the steam in the temporary hose, contaminated water siphoned from the concentrate tank back to the auxiliary boiler. Due to additional, continuing leaks in the heat exchanger of the waste evaporator (to which the auxiliary boiler also provides process steam), the licensee's efforts to decontaminate the auxiliary boiler feedwater had been ineffective.

Maintenance of proper boiler chemistry was difficult because blowdown options were severely restricted due to the contamination. As a result, a boiler tube failure caused on the order of 100 millicuries of radioactive material to be released off-site via the auxiliary boiler fire box and smokestack in the form of steam. This resulted in increased environmental levels of cesium and activation products being detected as far as eight miles downwind from the site boundary.

Action to be Taken by Licensee with an Operating License

1. Review your facility design and operation to identify systems that are considered as nonradioactive (or described as nonradioactive in the FSAR), but could possibly become radioactive through interfaces with radioactive systems, i.e., a nonradioactive system that could become contaminated due to leakage, valving errors or other operating conditions in radioactive systems. In particular, special consideration should be given to the following systems: auxiliary boiler system, demineralized water system, isolation condenser system, PWR secondary water clean-up system, instrument air system, and the sanitary waste system.

2. Establish a routine sampling/analysis or monitoring program for these systems in order to promptly identify any contaminating events which could lead to unmonitored, uncontrolled liquid or gaseous releases to the environment, including releases to on-site leaching fields or retention ponds.

Enclosure I

3. If these nonradioactive systems are or become contaminated, further use of the system shall be restricted until the cause of the contamination is identified and corrected and the system has been decontaminated. Decontamination should be performed as soon as possible. However, if it is considered necessary to continue operation of the system as contaminated, an immediate safety evaluation of the operation of the system as a radioactive system must be performed in accordance with the requirements of 10 CFR 50.59. The 10 CFR 50.59 safety evaluation must consider the level of contamination (i.e., concentration and total curie inventory) and any potential releases (either routine or accident) of radioactivity to the environment. The relationship of such releases to the radioactive effluent limits of 10 CFR 20 and the facility's Technical Specification and to the environmental radiation dose limits of 40 CFR 190 must also be evaluated. The record of the safety evaluation must set forth the basis and criteria on which the determination was made.

4. If it is determined in the 10 CFR 50.59 safety evaluation that operation of the system as a radioactive system is acceptable (i.e., does not involve an unreviewed safety question or a change to the Technical Specifications), provisions must be made to comply with the requirements of 10 CFR 20.201, General Design Criterion 64 to 10 CFR 50, Appendix I to 10 CFR 50 and the facility's Technical Specifications. In specific, any potential release points must be monitored and all releases must be controlled and maintained to "As Low As is Reasonably Achievable" levels as addressed in Appendix I to 10 CFR 50 and within the corresponding environmental dose limits of 40 CFR 190. However, if in the 10 CFR 50.59 determination it is determined that operation of the system as a radioactive system does constitute an unreviewed safety question or does require a change to the Technical Specifications, the system shall not be operated as contaminated without prior Commission approval.

Actions taken in response to Items 1 and 2 above shall be completed within 45 days from the date of this Bulletin. A verification letter shall be submitted within an additional 15 days to the Director of the appropriate NRC Regional Office. This letter shall document the completion of the required actions but need not delineate the specific actions taken. The specifics shall be documented and made available to the NRC for review during future onsite inspection efforts.

For facilities with a construction permit, no action is required. The Bulletin is provided for information. The subject of the Bulletin and the action required of operating plants should prove useful in the planning of systems designs and future operations.

Approved by GAO, B180225 (R0072); clearance expires 7-31-80. Approval was given under a blanket clearance specifically for identified generic problems.

8

Table I

Nonradioactive Liquid Systems Summary

Nonradioactive System	Monitored or Sampled	Sample Period(1)	Sample Analysis(2) μ Ci/ml
Auxiliary boiler (house service boiler)			
Condensate return	Both	Weekly	< 1E-7
Blowdown	Sampled	Weekly (3)	< 1E-7
City water supply	Sampled	Weekly	< 1E-7
Component cooling water (3-loops)	Both	Weekly	1.2E-4
Reactor component cooling			
Residual heat removal			
Spent fuel pit cooling			
Containment isolation valve seal water	None		
Discharge canal	Both	Monthly Composite	< 1E-8*
Discharge header	Sampled	Weekly	< 1E-7
Fire protection	None		
Makeup water	Sampled	(4)	< 1E-7
Service water (4-loops)			
Primary Auxiliary Bldg (PAB)	Both	Weekly (5)	< 1E-7
Containment Building	Both (6)	Weekly	
Turbine Building	None		
Essential secondary system loads	None		
Secondary system			
Sampling system	Sampled	Each Shift	< 1E-7
Blowdown	Sampled	Each Shift	< 1E-7
Sanitary sewer	(Sampled by PASNY, IP-3)		< 1E-7
Ventilation system cooling water	None		
Storm drain	Sampled	(7)	< 1E-7

(1) The licensee is reviewing the sampling schedule.

(2) The Chemistry Manager informed the inspector by telephone on August 4, 1981, that a lower limit of detection (LLD) of 1E-7 μCi/ml was established for the liquid samples (other than environmental samples) and, except for the component cooling water samples, there were none that recently exceeded this LLD.

(3) The commitment is to sample monthly but weekly sampling was being done at the time of the inspection.

(4) The sampling frequency is being determined.

(5) This sample is taken downstream of the component cooling water heat exchangers.

(6) This monitor is on the fan service water discharge line.

(7) The sampling frequency is being determined.

* The monthly composite sample of the discharge canal was stated to have an LLD of 1E-8 µCi/ml for Cs-134, Cs-137, I-131 and other typical gamma-emitting radioisotopes contained in the planned liquid releases during 1980 and the first calendar quarter of 1981.

10

Table II

Ventilation and Air Systems Summary

Ventilation, Vacuum, or Air System	Monitored or Sampled*
Stack	Both
Unit 2 Plant vent	Both
Unit 2 Containment and plant vent	Both
Unit 2 Fuel handling building ventilation	Monitored
Unit 2 PAB ventilation	Monitored
Turbine building**	None
Condenser air ejector	Both
Condenser vacuum pump	Sampled
Instrument air	Sampled
House service air	Sampled

* Samples were generally below the lower level of detection of 1E-8uCi/ml during April and May, 1981.

** Several ventilation exhaust paths exist, including windows and doors that may be left open.

Attachment 5.3 Indian Point 3 Initial Sampling Commitments

Bulletin 80-10 Monitoring Methods and Action Limits

System	Method of Monitoring	Action Level and Comments
Feed Water/Main Steam Condensate	RETS Table 3.3-1 Note F and ODCM, Section 2.1.16	see ODCM 2.1.16
Chemical Feed	NONE	Evaluated through Feed Water System
City Water	CS-021, Table 1	Verified reading above MDA requires investigation.*
Breathable Air	Initial Use: NG, I particulates During Use: NG weekly	Verified reading above MDA requires investigation.*
Aux. Steam/Condensate	CS-021, Table 1	Verified reading above MDA requires investigation.*
Component Cooling	RETS Table 2.1-1 and ODCM, 2.1.13	Verified reading above $1x10^{-6}$ uCi/ml of plant related nuclides, then perform evaluation as follows: Sample component cooling and service water (downstream of the component cooling heat exchangers) on a weekly basis to verify that no activity is being discharged via the service water system. A verified reading above MDA in service water requires investigation.*

* NOTE: The investigation will normally be performed by Chemistry Supervisor and/or Radiological Engineering. If the investigation shows a release of 2 m Ci/year or greater, the release should be included in the effluent releases and an NSE should be written. The NSE should consider the level of contamination, any potential releases to the environment, and doses as compared to NRC and EPA regulations. In addition, any results greater than MDA need to be evaluated for potential dose to personnel onsite, regardless of whether or not any offsite release has occurred.

Attachment 5.3 Indian Point 3 Initial Sampling Commitments

System	Method of Monitoring	Action Level and Comments
Service Water	RETS Table 2.1-1 and ODCM, 2.1.13	A verified reading above MDA in service water requires investigation.*
Instrument Air	CS-021, Table 1	A verified reading above MDA requires investigation.*
Sewage Treatment Plant Liquid Effluent	CS-021, Table 2 and R-56	Activity above MDA will be accounted for in monthly releases. If the total discharge exceeds 2mCi per year of plant-related nuclides, on NSE should be written and it should be determined if the STP effluent needs to be added as an effluent point in the ODCM.
Sewage Treatment Plant Sludge	Monthly grab sample for gamma emitters	If gamma activity concentration exceeds 3E-6 uCi/gram of plant-related nuclides (settleable solids), the following should be done: 1. Ensure requirements of 10CFR20.303 are not exceeded. 2. Investigate source of activity based on Cs-137/Cs-134 ratio and other detected nuclides.

* NOTE: The investigation will normally be performed by Chemistry Supervisor and/or Radiological Engineering. If the investigation shows a release of 2 m Ci/year or greater, the release should be included in the effluent releases and an NSE should be written. The NSE should consider the level of contamination, any potential releases to the environment, and doses as compared to NRC and EPA regulations. In addition, any results greater than MDA need to be evaluated for potential dose to personnel onsite, regardless of whether or not any offsite release has occurred.

Attachment 5.3 Indian Point 3 Initial Sampling Commitments

System	Method of Monitoring	Action Level and Comments
Laundry Tank (Admin. Bldg - 4th floor)	R-50 Monitor and sample prior to release	Activity above MDA would be routed to the Waste Holdup Tank.
House Service Boiler	CS-021, Table 2	A verified reading above MDA requires investigation.*
Steam Generator Blowdown	RETS Table 2.1-1	per RETS
Condenser Air Ejector	RETS Table 2.1-1	per RETS
Reboiler	NONE	Evaluated as part of Feed Water System
Storm Drains (sludge)	CS-021, Table 2	If gamma activity concentration exceeds 3E-6 uCi/gram of plant related nuclides, and the ratio of Cs-137/Cs-134 is less than 6.0 (indicates activity is less than 4 years old); then RES Supervisor should perform an evaluation (if not already evaluated). Additional measurements should be taken as necessary to determine sources of the activity and magnitude of the release. If the release is estimated, to have been greater then 2mCi/year, it should be included in the effluent release reports.

* NOTE: The investigation will normally be performed by Chemistry Supervisor and/or Radiological Engineering. If the investigation shows a release of 2 m Ci/year or greater, the release should be included in the effluent releases and an NSE should be written. The NSE should consider the level of contamination, any potential releases to the environment, and doses as compared to NRC and EPA regulations. In addition, any results greater than MDA need to be evaluated for potential dose to personnel onsite, regardless of whether or not any offsite release has occurred.