Entergy

ENTERGY NUCLEAR NORTHEAST
Engineering Report Cover Sheet

Engineering Report Title:

IP3 ASME SECTION XI, IWL CONCRETE CONTAINMENT INSPECTION FOR 2009

Engineering Report Type:

New ☒ Revision ☐ Cancelled ☐ Superceded ☐

Applicable Site(s)

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ANO1 ☐ ANO2 ☐ ECH ☐ GGNS ☐ RBS ☐ WF3 ☐

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*: For ASME Section XI Code Program plans per ENN-DC-120, if required.

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1.0 Scope and Objectives

This report satisfies the IWL requirements for the 3rd period of the 1st interval, and complements reports IP-RPT-06-00013, Rev. 0, and IP3-RPT-STR-03517, Rev. 0, for the containment of Indian Point Unit 3.

This report documents the general visual inspection of Class CC components and the Reinforced Concrete shell of Class CC pressure retaining components of the Vapor Containment (VC) for Unit 3 at Indian Point Energy Center. The inspection was done to identify signs of structural degradation that may affect structural integrity or leak tightness and to identify the required repairs and/or replacement activities to minimize degradation due to environmental conditions and aging. In addition, previous findings of past inspections will be addressed in terms of changes since the previous inspection.

This report was developed in accordance with the requirements of the ASME Boiler and Pressure Code, 1998 Edition, Section XI, Division 1, Subsection IWL as required and modified by NRC, Code of Federal Regulation, Title 10, Part 50, Section 55a, "Codes and Standards,"(10CFR50.55a – 1999). This inspection satisfies the requirements of the above code, as outlined in ENN-EP-S-003, Rev. 0, "IWL Visual Containment Inspection," and in IP3-RPT-VC-03071, "Containment Inservice Inspection First Ten Year Class MC and CC Program 09/10/98 - 09/09/08," References 7.2.1, 7.4.6, and 7.3.4, respectively.

2.0 Background

The Indian Point Unit 3 Nuclear Power Plant, located in Buchanan, New York is operated by Entergy Nuclear Northeast, and was formerly owned by the New York Power Authority. The Indian Point Unit 3 Nuclear Power Plant is a 1025(plus)-Megawatt electric, Westinghouse design, four-loop pressurized water reactor that was placed into commercial operation on August 30, 1976.

The containment structure is a reinforced concrete vertical cylinder with a flat base and a hemispherical dome. A welded steel liner is attached to the inside face of the concrete shell to ensure a high degree of leak tightness. The cylinder consists of a side wall measuring 148 feet from the basemat to the springline of the dome, and have an inside diameter of 135 feet. The sidewalls of the cylinder are 4'-6" thick, and the hemispherical dome is 3'6" thick. The structure is supported by a 9 ft. thick basemat, which rests directly on bedrock.

The original design of the containment preceded the issuance of ASME Section III, Division 2. As a result, the reinforced concrete primary containment was designed and constructed to the requirements of the American Concrete Institute, Building Code Requirements for Reinforced Concrete, ACI 318-63.

3.0 Details

3.1 Qualification of Personnel

All of the inspections were performed under the direction of the IWL Responsible Engineer (RE). The RE is the Civil/Structural Design Engineering Supervisor at IPEC and a New York State Registered Professional Engineer in accordance with IWL Procedure. The Responsible Engineer has knowledge of the Design and Construction Codes as well as other criterion used in IP3's Containment.

Responsible Engineer (RE) met or exceeded the following minimum qualifications:

- Knowledgeable or trained in the design, evaluation and performance requirements of structures,
- Degreed Civil/Structural Engineer,
- 10 years minimum related experience with a post-graduate degree and registered PE license.

Inspection Engineers were members of the Civil/Structural group and met or exceeded the following minimum qualifications:

- Knowledgeable or trained in the design, evaluation and performance requirements of structures,
- Qualified to perform visual examination either directly or remotely, with adequate illumination, to detect evidence of degradation.

Degreed engineers from the IPEC Civil Structural group performed the inspections under the direction of the RE. These engineers are knowledgeable and trained in the design, evaluation and performance requirements of structures and qualified to perform visual examination either directly or remotely, with adequate illumination, to detect evidence of degradation. All inspectors met the above requirements and their resumes and inspection qualifications are attached in Section 8.3. Each of the engineers received an eye examination to demonstrate that their vision met the requirements of VT-1 inspections, attached in Section 8.4. The walk-down team noted the conditions of structures. Areas of specific interest were photographed.

3.2 Qualification of Equipment

During the containment inspection movable tripod binoculars were used in bright daylight and shade. Indoors, existing building lighting was augmented with hand held portable spotlights exceeding 110 foot-candle at 20 feet focused on the required area under examination. The portable lights were fully charged before each use and never operated longer than four hours straight. The acuity achieved met and exceeded the requirements of Section XI Table IWA-2210-1 for visual examinations and therefore were acceptable to be used for General Visual Containment inspections. The equipment used was able to detect fine cracks and determine details of the surface from all vantage points.

Equipment used:

- Celestron 20x80 Giant Binoculars, No. 990176
- Streamlight (Litebox), Serial No. 037510
- Illuminance Meter DLM2, ID. No. IP3M-0619-0003

The Celestron 20x80 Giant Binoculars was field tested on July 14, 2009 at a distance of 255 feet using a neutral gray card in natural light. This test was witnessed by Gopal Bhalla and Paul Bowe and achieved the acuity listed in IWA Table 2210-1 VT-3. The Streamlight (Litebox) was measured on July 20, 2009 by John Skonieczny and Paul Bowe in the back corner of the IP3 maintenance shop with a background lighting of 1.5 foot-candles.

3.3 Accessible/Inaccessible Areas

The inspections were performed directly inside buildings, which are adjacent to the Containment Building and from the exterior using remote visual inspections. The location of the observation points is listed and shown in Figure 1. The equipment used enabled the inspectors to see the entire containment building. The entire top of the containment building dome was visible from the top of the IP1 stack and from the containment dome via man basket and crane. This access will be limited to this inspection and will not be available in future inspections. The sides and slope of the dome were visible from the lower ground locations. The only portions that were inaccessible are the attachment points between buildings, buried sections, and the sections behind the plant vent. The results of the inspections did not find anything that would warrant exploration of the inaccessible areas. The inaccessible areas are identified on the ISI drawing ISI-IWL-002.

3.4 Acceptance Standards

The RE and inspectors found no indications that would require further detailed evaluations for accessible or inaccessible areas.

3.5 Evaluation of Results

The Responsible Engineer reviewed the inspection checklists/notes and assessed the current condition of the structures. All defects were evaluated for their effect on the structure based on the applicable ACI, AISC, ASME Section XI, and NY State Building Codes. References 7.3.2, 7.3.3, 7.3.5, 7.3.6, and 7.4.7 were used to evaluate any flaws, indications, or degradation.

The condition of structures are classified into one of the following:

Acceptable – Acceptable structures are capable of performing their structural functions, including protection or support of safety-related systems or components. Acceptable structures are free of degradation, which could lead to possible failure.

Acceptable with Deficiencies – Structures that are acceptable with deficiencies are capable of performing their structural functions, including the protection or support of safety-related systems or components. The deficiencies (degradation) are acceptable, but need monitoring.

Unacceptable – Unacceptable structures are those which are degraded such that they are not capable of performing their structural functions, including the protection or support of safety-related systems or components.

4.0 Operating Experience

The following are two examples of the Operating Experience throughout the industry, in regards to IWL Containment inspections:

4.1 OE12772 - North Anna

Inspection of North Anna Containment Concrete Structures Identifies Embedded Wood

Abstract:
During a required visual inspection of the U-1 and U-2 containment structures, several pieces of wood were discovered embedded in the concrete. To date, three pieces of wood have been discovered from the external visual inspection of Unit 1, and one piece in Unit 2. The wood was most likely part of the forms used during the initial construction of the units. Based on an evaluation of the defects and the design of the containment structure, structural integrity of the containment has not been compromised.

4.2 Event Number: 280-010730-1, Surry 1

Event Date: 7/30/2001, INPO Change Date 06/03/2002, Unit: 280, Surry 1
Event Title: Embedded Material in the Containment Structures

Event Summary:
During July and August, 2001, detailed inspection of both Surry Unit 1 and Unit 2 containment exterior concrete was conducted for the ASME Section XI, IWL base line inspection. Augmented detailed inspections of the containment dome areas were conducted during refueling outages, Unit 1 in November 2001 and Unit 2 in April 2002. The purpose of the inspections was to verify that no significant degradation of the containment concrete had occurred and to recommend actions necessary to prevent further degradation. The earlier detailed inspections of the containment concrete

exterior resulted in finding numerous small cavities resulting from entrapment of air bubbles in the surface of formed concrete during placement and consolidation and numerous hairline cracks typical of concrete vessels subjected to elevated internal pressure testing. Minor surface defects were identified for future repair. During the augmented inspections in the refueling outages, small sections of dimensional lumber, debris, and wood chips were extracted from the containment dome areas, and the areas were patched. Three findings resulted in exposing the underlying reinforcing steel. The first involved repair of a spalled area down to sound concrete when a six inch long section of two by four lumber was found to extend into the structure past the reinforcing steel. The second was a five foot by three foot area of concrete that was missing the mortar and contained only coarse aggregate that extended sixteen inches into the structure. The third area involved a single reinforcing bar found without sufficient concrete cover. Repairs were made during the augmented inspection. Each of these areas was evaluated and found not to have adversely affected the ability of the containment structures to perform their design function. The containment structures were generally found to be in good material condition. The interface between the containment structure and grade was inspected with no findings. The interface between adjacent building slabs and the containment structure was inspected with no findings. The interfaces with adjacent structures were inspected with no findings. Embedded material had been cast into the containment structures during original plant construction. The slight depression of the wood below the adjacent concrete indicated that the wood was likely concealed below a thin layer of cement paste immediately following removal of the concrete formwork. Over time this thin layer of concrete has spalled off, leaving the wood exposed. This event is not significant because the containment structures for both units were capable of performing their design function. This event is NOTEWORTHY because three areas were found not to have sound exterior concrete covering the renforcing steel.

During the baseline IWL inspection at Unit 3 Indian Point, a small piece of wood was found embedded in the concrete. The wood was immediately removed and found to be 3" deep, thus, any issue of containment integrity was resolved.

5.0 Summary of Results

The exterior inspection of the Unit 3 Containment Building was recently completed to fulfill the third period of the first interval for IWL inspections. The intent of this inspection was to monitor previously found anomalies, and identify new signs of structural degradation that could potentially lead to the design functional failure of the Containment Building structure. Also, any findings requiring repairs shall have work orders and/or condition reports written as called for.

This inspection was completed as a general visual. When needed, optical enhancing equipment with zoom capabilities from 20x up to 80x were used. The inspection sheets, notes, and photos can be found in section 8.2. In some cases, photos do not show the same level of detail as was seen in the field due to lesser zoom capabilities by the camera in use.

The previous inspections, IP-RPT-06-00013, Rev. 0 and IP3-RPT-STR-03517, Rev. 0, identified several anomalies that have been reviewed and examined in the current inspection to determine if any further degradation has occurred. For the most part, the previous findings have remained unchanged over the past cycle. Those findings that have further degraded, such as spall areas increasing, were evaluated and deemed acceptable. Although the dimensions of these spalls may have, in some instances, exceeded the screening criteria set by Engineering Standard, ENN-EP-S-003, Rev. 0, the containment integrity is not in question. The remainder of the 2001 and 2005 inspection findings show no signs of further degradation and only require further monitoring at the next scheduled inspection.

During the 2009 IWL inspection, several general typical concrete conditions were identified throughout the structure. Multiple components, i.e. VCC-19, list these general comments such as minor cracks and pattern cracking, numerous bugholes, leaching, scaling, and spalling. The generalization of these comments indicate that the findings are note worthy only and will not impact the structural integrity of containment. At this time, none of these indications warrant specific monitoring, thus specific characterization is not required and the conditions will continue to be looked at in the broad sense. Cracks are included as general comments. Reinforced concrete, such as containment, is expected to crack and none of the cracks have any significant width (considered tight) or rust staining. A sample comparison of areas with multiple cracks was made using photos from 2001, 2005 and 2009, and no changes were identified. Therefore, the cracking on containment is concluded to be inactive pending the next integrated leak rate test (ILRT).

The majority of the structure has a plethora of bugholes that can be seen in all the exterior photos.

In addition to the previously found rust staining, it would appear that more exposed rebar and embedded pieces of metal show signs of rust staining. The rust streaks, in some instances, extend down over five feet. This can be seen in 2005 report photos U3-036215 and U3-066093. The major contributors to rust staining on the VC are the lightning arrestors, the vent duct, a steel cable hanging down from the handrail in a joint, and the handrail itself. None of these major contributors are part of the scope of this inspection, and play no role in the design function of the VC. The steel cable was removed during the vent duct refurbishment project and the other miscellaneous steel addressed immediately above was coated for protection. However, the new findings of potential exposed rebar, miscellaneous embedded steel, and voids with rust staining are part of the scope, but do not appear to be excessive. The exposed steel seems to be the result of improper concrete cover during initial construction.

In September of 2009, a crane was used to coat the handrail, vent duct, and lightning arrestors. At this time the opportunity was seized to coat a majority of the exposed metal embedments with evidence of corrosion, including rebar. Although the as-found conditions did not warrant immediate repairs, the coating application will prohibit future corrosion. The locations coated can be found in Attachment 8.5. Coating as a repair method was selected since future ILRTs could potentially cause any concrete patches to pop out re-exposing the steel. The coating used per work order 00196946, task 04, was a PPG Amerlock epoxy sealer and a PPG PSX 700 Engineered Siloxane Top Coat.

This inspection, along with previous inspections, identified multiple 1" diameter pipe inserts in zones 4, 5, and 6. The pipes were filled with concrete and used in original construction as weep holes. The majority of these pipes can be found around the equipment hatch in zone 6. Many stick out from containment approximately 1". Others were cut flush and in many cases covered by concrete. In addition, multiple ½" drop-in anchor sleeves were found in the same zones. The pipes and anchor sleeves had minimal to no visible corrosion.

Leaching is visible over the majority of containment. Areas in close proximity to the spring line previously experienced the most leaching. As you move away from the spring line in either direction, the leaching stains significantly decrease. Based on the existing condition, leaching on containment is inactive. There are no current stalagtites or stalagmites and all visible locations are stains only. Using a sample of comparative photos from 2001 and 2009, the leaching stains all appear to be the same.

During the inspection of the pipe penetrations, some areas of concrete flaking around various pipe penetrations were found. The flaking has exposed aggregate, but the integrity of containment has not been compromised. This flaking occurred in zone 004 between El. 43' and 68' and can be seen in photos U3-046211 and U3-046212. Also, several joint spalls ranging from 3 to 4 feet long with exposed aggregate have been identified in zone 001 between El. 68' and 88'. These spalls are not exceptionally deep and would not impose an immediate threat to containment integrity. They appear to be from original construction and resemble a honeycombing condition. Additional degradation is not expected to appear before the next 5 year inspection.

The dome ring was load tested and found to be in good condition. Results and details of the test can be found in Attachment 8.6.

6.0 Conclusion

The Containment Structure remains fully capable of performing its design functions. **The Concrete Containment is Acceptable with Degradation** in accordance with ASME Section XI IWL. The IWL components and structures are capable of performing their structural functions, including protection or support of safety-related systems or components. The components and structures are free of degradation which could lead to possible failure. Indications identified will not deteriorate beyond an acceptable condition prior to the next scheduled inspection.

The overall condition of containment has remained unchanged for the most part. Additional deficiencies identified during the latest inspection are primarily due to enhancements to the documentation of the inspection to improve proper characterization for future monitoring and trending. These deficiencies typically are below the screening criteria requirements and in the past were not documented for such reasons.

7.0 Reference Material

7.1 Definitions

Containment: The composite structure that serves as a leak-tight barrier that supports the load of the inside pressure in the event of a reactor coolant or steam system leak and prevents the uncontrolled release of radioactivity to the environment under normal and postulated accident conditions.

Accessible Areas: Those areas of the containment pressure retaining surface, including integral attachments, that can be examined directly or remotely without installation of temporary means (i.e.: scaffolding or ladder) to accomplish the examination.

Inaccessible Areas: Those areas of the containment pressure retaining surface, including integral attachments that cannot be examined directly or remotely due to permanent obstruction (i.e.: Embedment in concrete, interference of plant equipment or structures).

General Visual Examination: A visual examination performed either directly or remotely to assess the general condition of the accessible containment surfaces and to detect evidence of degradation that may affect structural integrity or leak tightness.

Structural Integrity: The ability of a structure or component to withstand prescribed design loads.

Evaluation: The process of determining the significance of examination or test results, including the comparison of examination or test results with applicable acceptance criteria or previous results.

Cracks: A complete or incomplete separation, of either concrete or masonry, into two or more parts produced by breaking or fracturing. The different types (e.g.: pattern, checking, hairline, D-cracking) of cracking are illustrated by photographs in ACI 201.1R-68 (see Figures A.1.1a-h, A.1.2a-c, A.1.3, and A.1.5).

Cracking of the concrete cover is a common mechanism for any concrete structure. This condition is normally a result of normal expansion and contraction, which occurs within the concrete due to variations in temperature and stress.

> Passive Cracks observed in the concrete cover are acceptable for continued service and do not warrant a review by the IWL Responsible Engineer. Passive cracks are defined as those having an absence of growth (when compared to the baseline examination results) and absence of other degradation mechanisms at the crack (e.g.: bulging caused by corrosion buildup).

Distortion: Any abnormal deformation of concrete from its original shape. This condition is illustrated by photograph in ACI 201.1R-68 (see Figure A.2.2).

Distortion of the concrete structure would be a result of abnormal loading conditions (e.g.: earthquake, water hammer) and the damage would be primary concentrated in the concrete cover. However, internal structural degradation may be possible.

Efflorescence (Leaching): A deposit of salts, usually white, formed on a surface, the substance having emerged from below the surface. This condition is illustrated by photograph in ACI 201.1R-68 (see Figure A.1.1.g).

Efflorescence (also referred to as leaching) is caused by exposure of the concrete to flowing or penetrating water that results in the leaching of certain salts, including calcium hydroxide, from the concrete paste. This condition normally occurs at locations of high moisture penetration and flow, such as cracks.

Popout: The breaking away of small portions of a concrete surface due to internal pressure which leaves a shallow, typical conical depression. This condition is illustrated by photographs in ACI 201.1R-68 (see Figures A.2.7, A.2.7.1, A.2.7.2, and A.2.7.3).

Scaling (including peeling): Local flaking or peeling away of the near surface portion of concrete or mortar. Scaling may be loss of coarse aggregate particles as well as mortar. This condition is illustrated by photographs in ACI 201.1R-68 (see Figures A.2.9.1a & b, A.2.9.2a & b, A.2.9.3a & b, A.2.9.4a & b, and A.2.9.5a & b).

Spall: A fragment, usually in the shape of a flake, detached from a larger mass by a blow, by the action of weather, by pressure, or by expansion within the large mass. A spall is normally a circular or oval depression or in some cases elongated depression over a reinforcing bar. This condition is illustrated by photographs in ACI 201.1R-68 (see Figures A.2.10.1, A.2.10.2, and A.2.11.a & b).

Corrosion: Disintegration or deterioration of concrete or reinforcement by electrolysis or by chemical attack. This condition is illustrated by photograph in ACI 201.1R-68 (see Figure A.2.16).

7.2 References: Commitment Documents

7.2.1 Code of Federal Regulations; Title 10, Energy; Part 50, Domestic Licensing of Production and Utilization Facilities; Section 50.55a, Codes and Standards

7.2.2 Code of Federal Regulations; Title 10, Energy; Part 50, Domestic Licensing of Production and Utilization Facilities; Appendix J, Primary Containment Leakage Testing for water-cooled Power Reactors

7.2.3 Regulatory Guide 1.147, Revision 12, Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1

7.2.4 USNRC NUREG-1522, Assessment of Inservice Conditions of Safety-Related Nuclear Plant Structures

7.2.5 USNRC Inspection Manual, Inspection Procedure 62003, Inspection of Steel and Concrete Containment Structures at Nuclear Power Plants

7.2.6 USNRC IN 97-11, Cement Erosion From Containment Sub-foundations at Nuclear Power Plants

7.2.7 USNRC IN 97-29, Containment Inspection Rule

7.3 References: Development Documents

7.3.1 ASME Boiler and Pressure Vessel Code, Section XI, Subsections IWE/IWL 1998 Edition, No Addenda

7.3.2 ACI 201.1R-92, Guide for Making a Condition Survey of Concrete In-Service

7.3.3 ACI 349.3R-96, Evaluation of Nuclear Safety-Related Concrete Structures

7.3.4 IP3-RPT-VC-03071, "Containment Inservice Inspection, First Ten Years, Class MC and CC Program."

7.3.5 IP3-CALC-VC-03244, "Acceptable limit for VC concrete Inspection per ASME Section XI, IWL

7.3.6 Report on Consolidated Edison's IP3, Containment Vessel Structural Integrity for Wedco Corp., dated February 21, 1975 (NYPA file # 45-C-0347)

7.3.7 Final Containment Design Report by Westinghouse Corp., dated September 1970 (NYPA file # 41-E-0541)

7.3.8 IP3-DED-AS-031, Rev. 0, "ASME Section XI, IWL Containment Inspection Procedure," dated 7/25/01

7.3.9 Entergy Report IP3-RPT-STR-03517, Rev. 0, "IP3 ASME Section XI, IWL Concrete Containment Inspection," dated 9/24/01

7.4 References: Interface Documents

7.4.1 IP3-RPT-VC-1901 "Basis Document for Containment Integrity"

7.4.2 IP-SMM-DC-904, Rev. 4, "ASME Code Section XI – Repair/Replacement Program"

7.4.3 IP-C-01 "Installation Procedure for Concrete Repairs"

7.4.4 SED-AD-22, "Condition Monitoring of Maintenance Rule Structures"

7.4.5 EN-DC-147, Rev. 0, "Engineering Reports"

7.4.6 ENN-EP-S-003, Rev. 0, "IWL Visual Containment Inspection"

7.4.7 Entergy Memo IP-DEM-01-005, From Richard Drake, To: ANII, dated April 6, 2001, "IWE/IWL Remote Visual Equipment Qualification"

7.4.8 Entergy Report IP3-RPT-VC-03071, Containment Inservice Inspection first ten year MC & CC program, 09/10/98-09/09/08. Rev. 1 dated Jan 11, 2001

7.4.9 NYPA memo IP-DEM-95-139, from S. Guarnaccia to J. Janicki, resolution of PIDs 18440 through 18445

7.4.10 Entergy Report IP3-RPT-VC-03071, Revision 2, CONTAINMENT INSERVICE INSPECTION FIRST TEN YEAR CLASS MC AND CC PROGRAM 09/10/98 – 09/09/08

7.4.11 Entergy Report IP3-RPT-STR-03398, Revision 0, ASME Section XI, IWE MC and Metallic Liners of Class CC components inspection, approved 7/31/01

7.5 References: Containment ISI Drawings

7.5.1 ISI-IWL-001 "Containment Concrete Roll-Out Drawing Elev. 34'-0" to 191'-0"

7.5.2 ISI-IWL-002 "Containment Concrete Dome Plan, Above El. 191'-0"

7.5.3 ISI-IWL-003 "Containment General Arrangement."

8.0 Attachments

Attachment 8.1 Figures and Drawings

Attachment 8.2 Inspection Reports

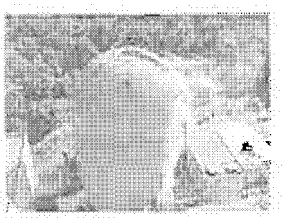
Attachment 8.3 Resumes

Attachment 8.4 Qualification Certificate

Attachment 8.5 Exposed Metal Repairs – Before & After Photos

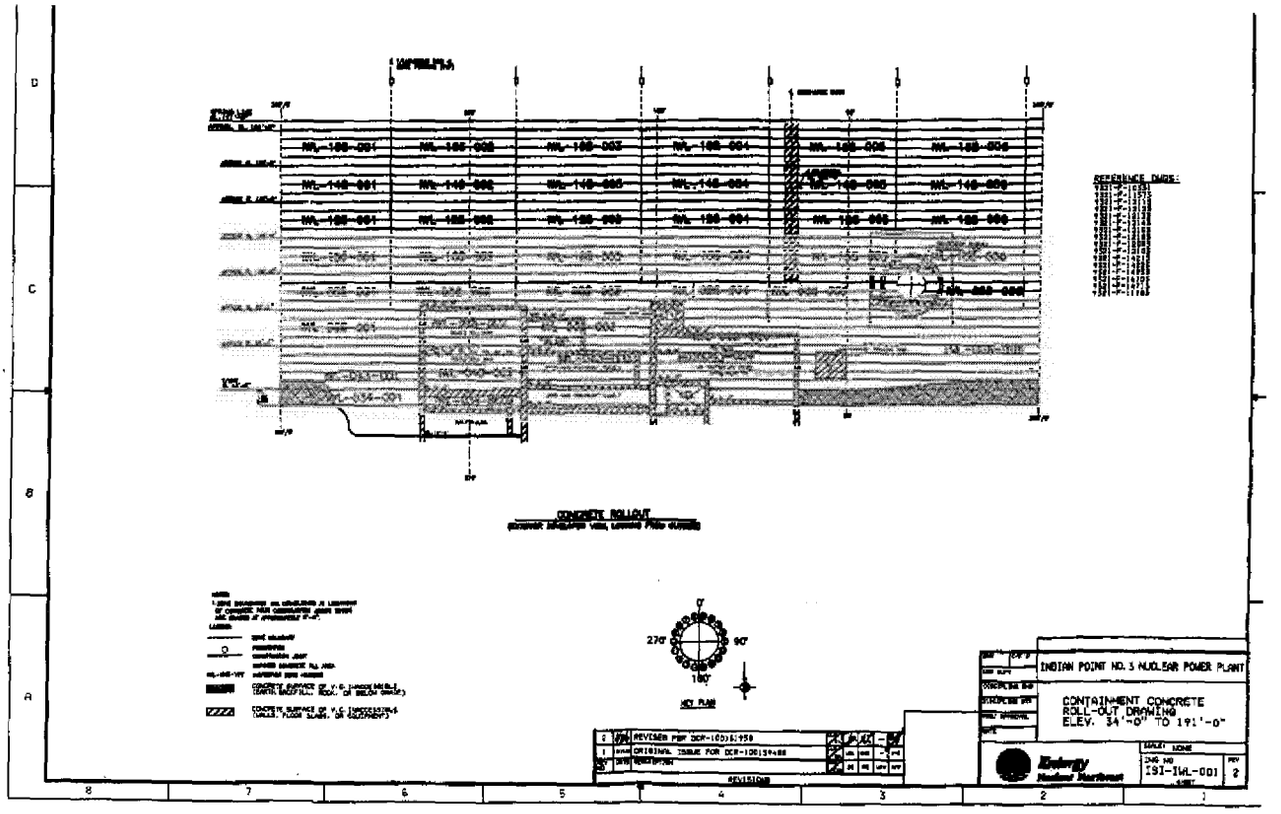
Attachment 8.6 Unit 3 Dome Ring Inspection and Load Test Report

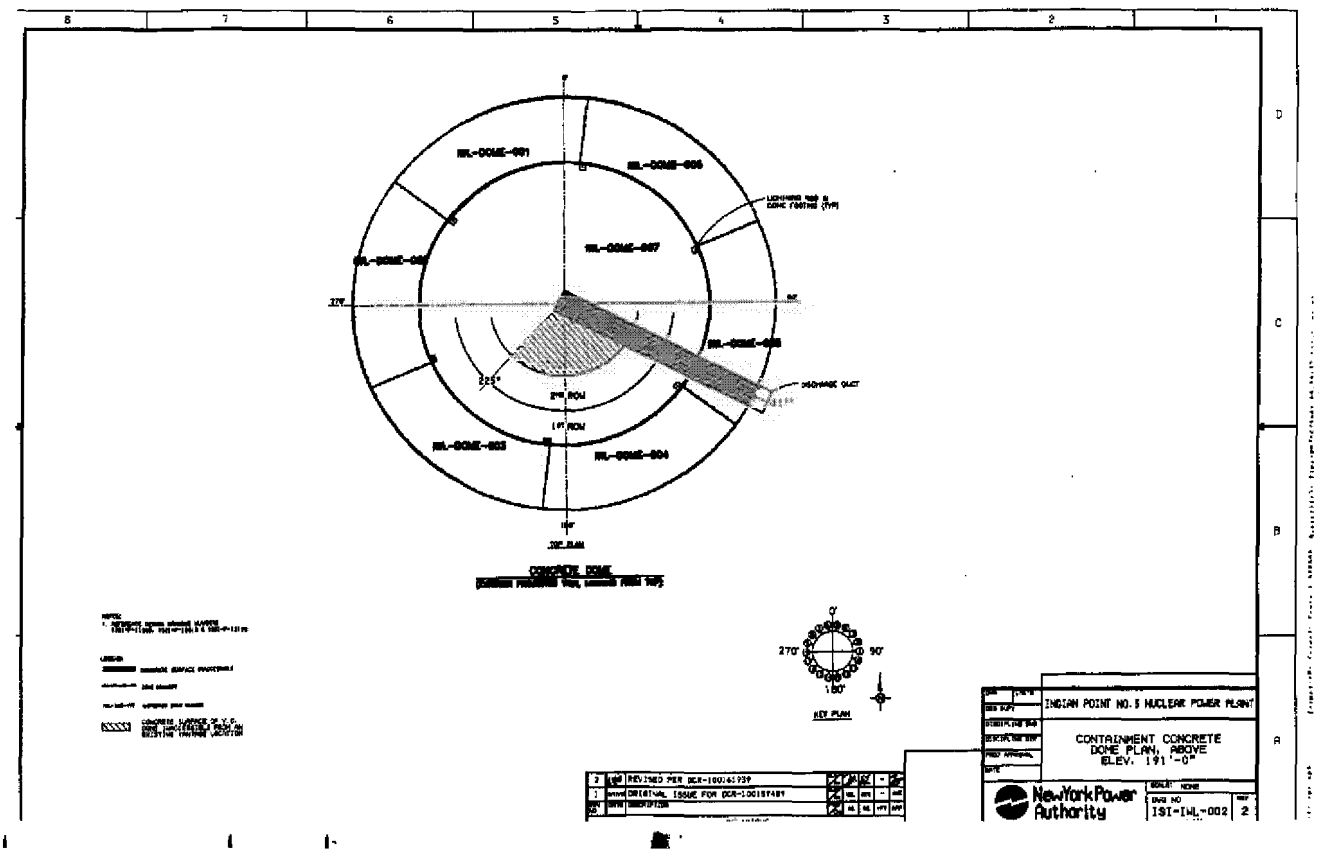
Indian Point 3
Nuclear Power Plant

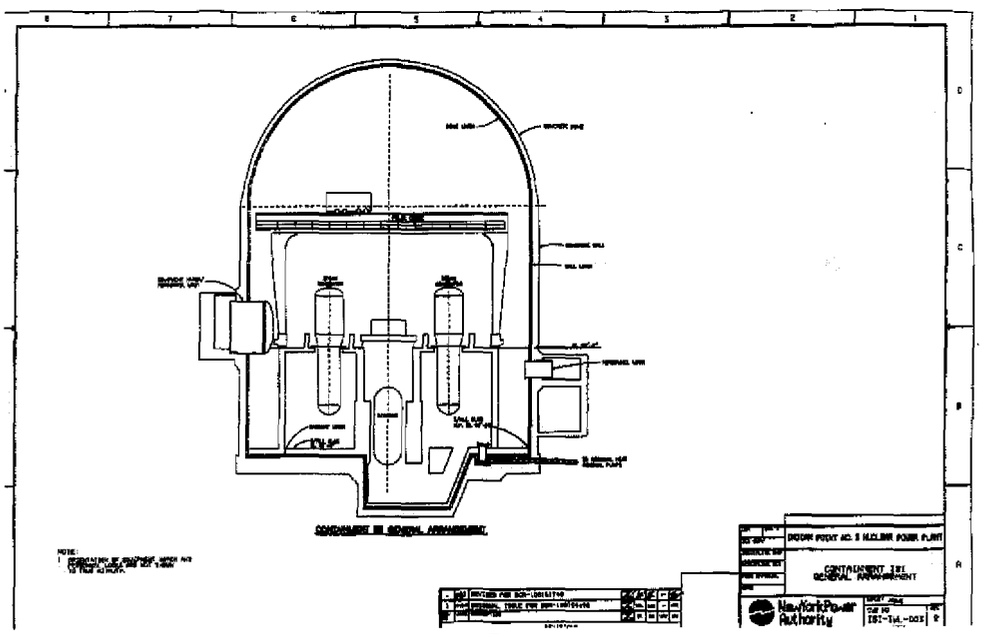


ATTACHMENT 8.1

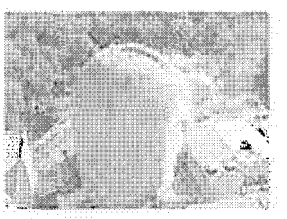
FIGURES AND DRAWINGS


CONCRETE ROLLOUT
INDIAN POINT NO. 3 NUCLEAR POWER PLANT
CONTAINMENT CONCRETE
ROLL-OUT DRAWING
ELEV. 34'-0" TO 191'-0"
ISI-IWL-001


CONCRETE DOME
KEY PLAN
INDIAN POINT NO. 3 NUCLEAR POWER PLANT
CONTAINMENT CONCRETE DOME PLAN, ABOVE ELEV. 191'-0"
New York Power Authority
ISI-IWL-002

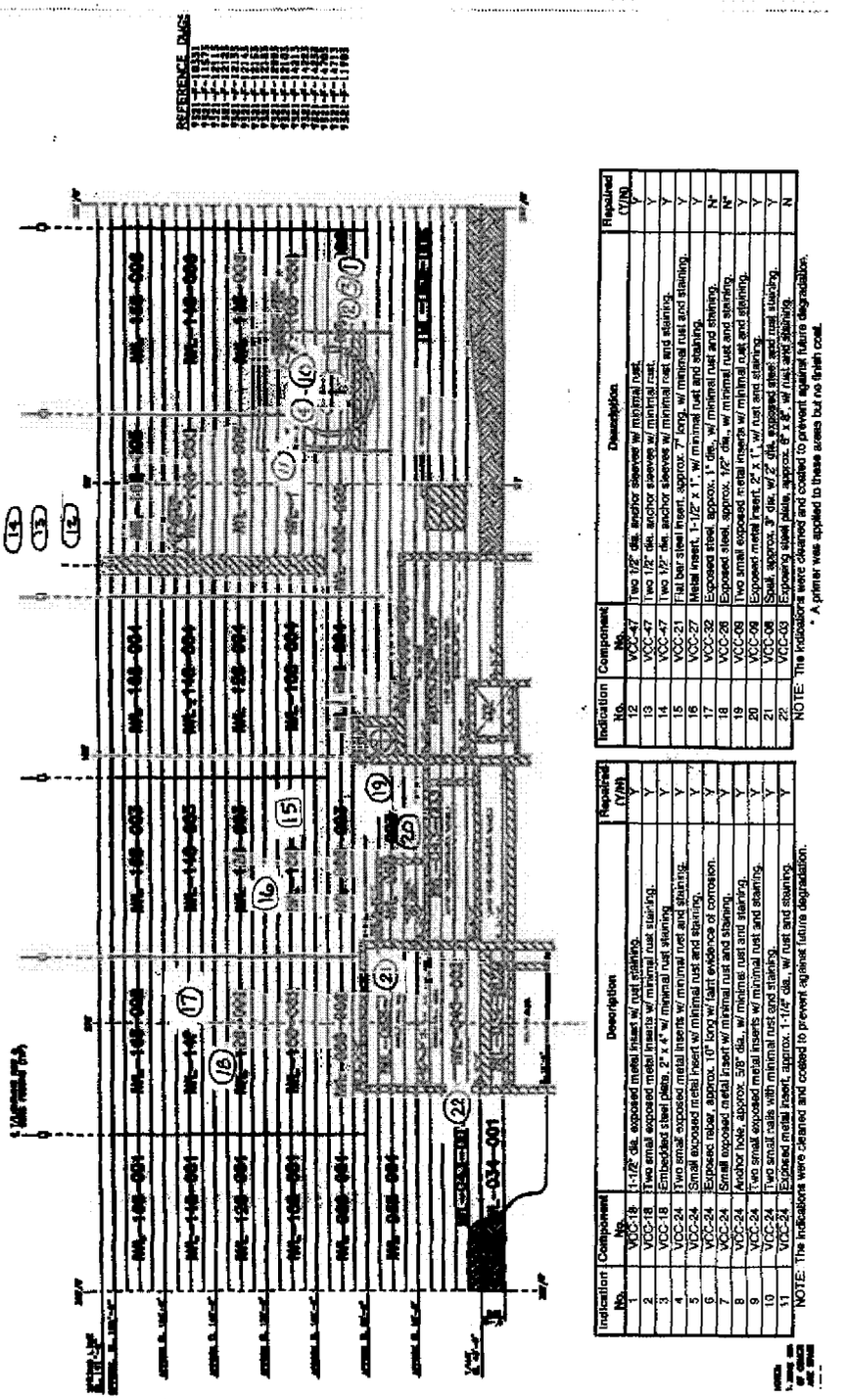


Indian Point 3
Nuclear Power Plant



ATTACHMENT 8.2

INSPECTION REPORTS



Indication No.	Component No.	Description	Repaired (Y/N)
1	VCC-18	1-1/2" dia. exposed metal insert w/ rust staining.	Y
2	VCC-18	Two small exposed metal inserts w/ minimal rust staining.	Y
3	VCC-18	Embedded steel plate, 2" x 4" w/ minimal rust staining.	Y
4	VCC-24	Two small exposed metal inserts w/ minimal rust and staining.	Y
5	VCC-24	Small exposed metal insert w/ minimal rust and staining.	Y
6	VCC-24	Exposed rebar, approx. 10" long w/ faint evidence of corrosion.	Y
7	VCC-24	Small exposed metal insert w/ minimal rust and staining.	Y
8	VCC-24	Anchor hole, approx. 5/8" dia., w/ minimal rust and staining.	Y
9	VCC-24	Two small exposed metal inserts w/ minimal rust and staining.	Y
10	VCC-24	Two small rails with minimal rust and staining.	Y
11	VCC-24	Exposed metal insert, approx. 1-1/4" dia., w/ rust and staining.	Y

NOTE: The indications were cleaned and coated to prevent against future degradation.

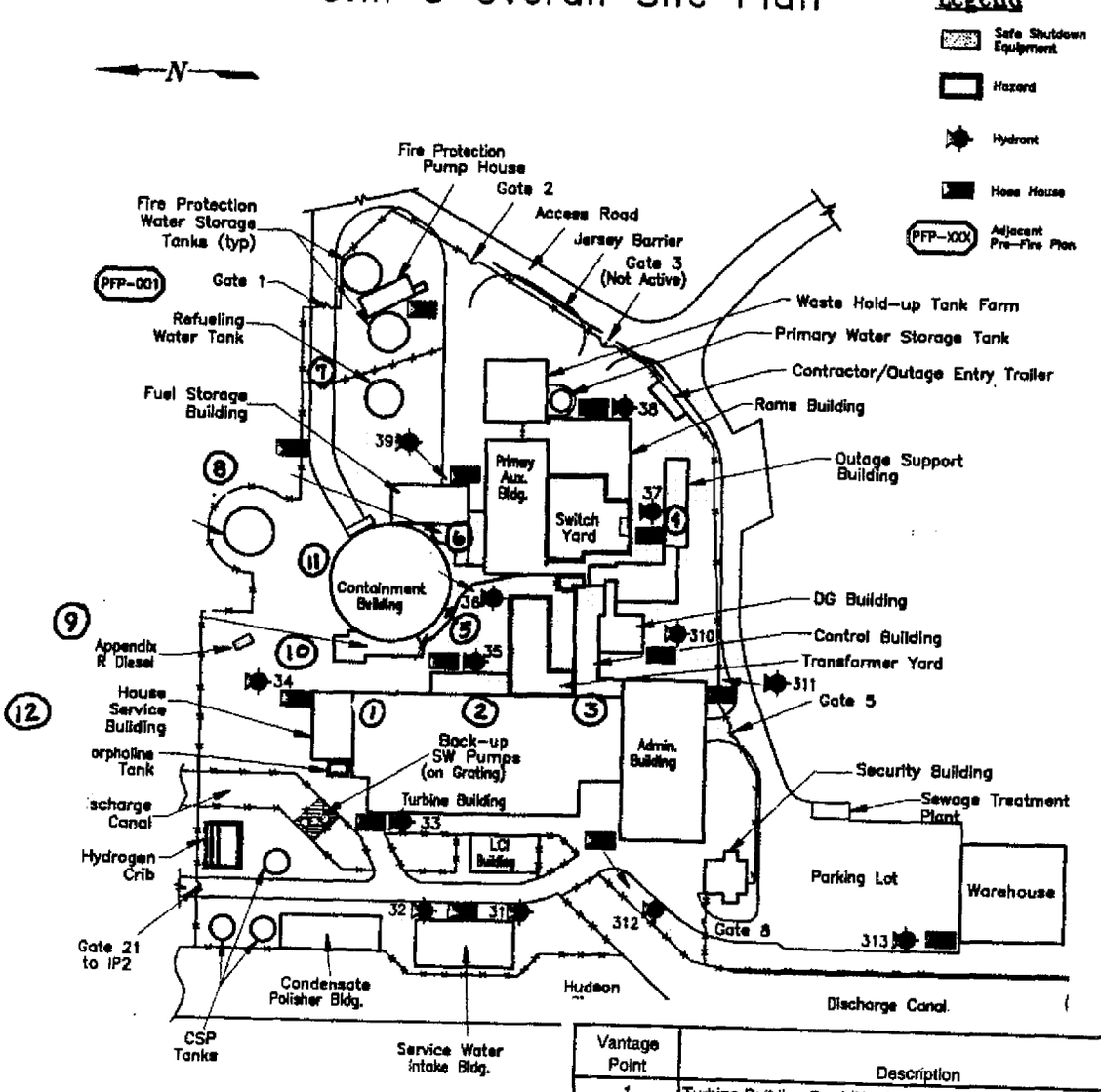
Indication No.	Component No.	Description	Repaired (Y/N)
12	VCC-47	Two 1/2" dia. anchor sleeves w/ minimal rust.	Y
13	VCC-47	Two 1/2" dia. anchor sleeves w/ minimal rust.	Y
14	VCC-47	Two 1/2" dia. anchor sleeves w/ minimal rust and staining.	Y
15	VCC-21	Tail bar steel insert, approx. 7" long, w/ minimal rust and staining.	Y
16	VCC-27	Metal insert, 1-1/2" x 1", w/ minimal rust and staining.	Y
17	VCC-32	Exposed steel, approx. 1" dia., w/ minimal rust and staining.	N*
18	VCC-26	Exposed steel, approx. 1/2" dia., w/ minimal rust and staining.	N*
19	VCC-09	Two small exposed metal inserts w/ minimal rust and staining.	Y
20	VCC-09	Exposed metal insert, 2" x 1", w/ rust and staining.	Y
21	VCC-08	Small, approx. 3" dia. w/ 2" dia. exposed steel and rust staining.	Y
22	VCC-03	Exposed steel plate, approx. 6" x 36" w/ rust and staining.	N

NOTE: The indications were cleaned and coated to prevent against future degradation.
* A primer was applied to these areas but no finish coat.

VANTAGE POINTS

FIGURE 1

Unit 3 Overall Site Plan



Vantage Point	Description
1	Turbine Building Roof (Northeast Corner)
2	Turbine Building Roof (East parapet @ center line)
3	Turbine Building Roof (Southeast Corner)
4	Outage Support Building Roof
5	Electrical Tunnel Roof
6	Alley between Fan House and Containment
7	Roadway leading to 95' equipment hatch
8	Roadway just North of old NYPA property line
9	Superheater Structure
10	Roadway leading to transformer yard
11	Areas at and below 95' equipment hatch, including stairs
12	Top of stack

ATTACHMENT 7.1 **DEMONSTRATION OF REMOTE EXAMINATION METHOD (SAMPLE)**

Sheet 1 of 1

Plant: Indian Point Energy Center – Unit 3 Date: July 15, 2009

EQUIPMENT USED:

CELESTRON 20 X 80 GIANT BINOCULARS, No. 990176

DESCRIPTION OF DEMONSTRATION: (Include discussion of appropriate viewing distance, lighting condition and resolution achieved.)

The neutral gray card with 2 line markings of thickness 0.015" and 0.03" to emulate concrete cracks was held at a measured distance of 255 feet from the Binoculars which were mounted on a tripod.

Weather Condition: Clear, with bright sunlight.

Results: Both lines on the test card were clearly visible.

LIMITATIONS:

None.

Demonstration Performed By:

Signature: P. Bowe Date: 12-8-09

Demonstration Witnessed By:

Signature: G. Bhalla Gopal Bhalla Date: 12-16-09

Responsible Engineer Review:

Signature: R. Drake Richard M Drake Date: 1-6-10

Site Level III Review:

Signature: N/A Date:

Authorized Nuclear Inspector (ANII) Review:

Signature: A. Schafino HSB CT Date: 3/10/10

ATTACHMENT 7.1 **DEMONSTRATION OF REMOTE EXAMINATION METHOD (SAMPLE)**

Sheet 1 of 1

Plant: Indian Point Energy Center – Unit 3 Date: July 20, 2009

EQUIPMENT USED:

Streamlight (Lightbox), Serial Number VEC124BXL
Illuminance Meter DLM2, ID No. IP3M-0619-0003 Calibration Due Date of 02/09/2010

DESCRIPTION OF DEMONSTRATION: (Include discussion of appropriate viewing distance, lighting condition and resolution achieved.)

Based on an expected viewing distance of 20 feet or less for the visual examinations to be performed inside the Aux Boiler Feed Pump Building, the demonstration proved a light intensity in excess of 110 ft-candle was achieved at a distance of 20 feet using the DLM2 Illumanance Meter. The acceptable illumanance is 50 ft-candle at 20 feet. The test was conducted in the back corner of the IP3 Maintenance Shop with background lighting at 1.5 ft-candle.

LIMITATIONS:

Flashlight must be charged every four hours (use restricted to four hours or less).

Demonstration Performed By:

Signature: P. Bowe Date: 12-8-09

Demonstration Witnessed By:

Signature: J. Skonieczny Date: 12-16-09

Responsible Engineer Review:

Signature: R. Drake Date: 1-6-10

Site Level III Review:

Signature: N/A Date:

Authorized Nuclear Inspector (ANII) Review:

Signature: A. Schafino Hebert Date: 3/10/10

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-01 **Zone No:** 001 **Drawing No.:** ISI-IWL-001

Description: El. 34' – El. 43' **Work Order No:** 138856

Equipment Used: Celestron Giant 20x80 Binoculars **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☒	☐	☐	1
Spalls	☐	☐	☒	☐	
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☒	☐	☐	1
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☐	☐	☒	
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other (bugholes)	☐	☒	☐	☐	1

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny / [signature] Date: 12-16-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable: **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT # 10 & 11

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

ANII Review: [signature] ASME Date: 4/15/10
Print/Signature

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 01

ZONE No: 001

No.	Comment	Initials
1	Numerous bugholes, minor vertical and joint cracks, leaching, scaling, and spalling. These are general conditions noted on containment that have NO impact to the structural integrity and fall below the requirement for thorough characterization of indications for future monitoring. However, this condition was noted prior and continues to be note worthy only.	PMB

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-02 **Zone No:** 002 **Drawing No.:** ISI-IWL-001

Description: El. 34' – El. 43' **Work Order No:** 138856

Equipment Used: Streamlight – Litebox flashlight **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☐	☒	☐	
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☐	☒	☐	
Spalls	☐	☐	☒	☐	
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☐	☒	☐	
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☒	☐	☐	2
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other	☐	☒	☐	☐	1

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / _____ Date: 12/8/09 **Examined By:** J. Skonieczny _____ Date: 12-16-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable : **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT : AUX. BOILER FEED BUILDING

RE Signature: R. Drake / _____ Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date: _____
Print/Signature/Level

ANII Review: _____ HEBERT Date: 4/15/10
Print/Signature

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 02

ZONE No: 002

No.	Comment	Initials
1	Coating peeling and flaking on south end.	PMB
2	Painted wall; mat is visible as is the foundation	PMB

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-03 **Zone No:** 001 **Drawing No.:** ISI-IWL-001

Description: El. 43' – El. 68' **Work Order No:** 138856

Equipment Used: Celestron Giant 20x80 Binoculars **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	2
Scaling	☐	☒	☐	☐	1
Spalls	☐	☒	☐	☐	1,3
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☒	☐	☐	1
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☐	☐	☒	
Excessive corrosion of the exposed embedded metal surfaces	☒	☐	☐	☐	3
Detached embedment or loose bolts	☐	☐	☒	☐	
Other	☐	☒	☐	☐	1

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny [signature] Date: 12-16-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable: **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT #9, 10, 11

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

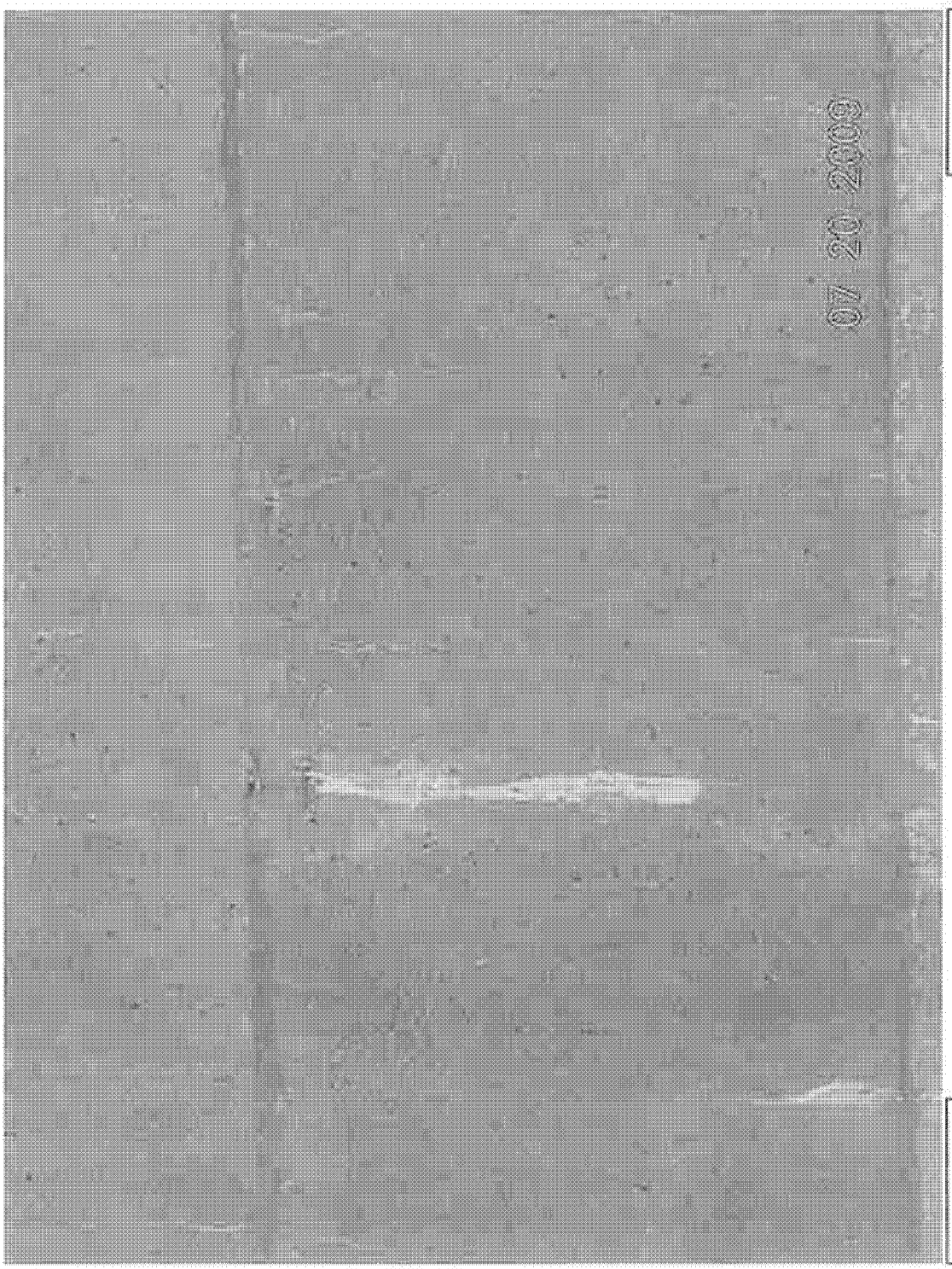
ANII Review: [signature] ISBET Date: 4/15/10
Print/Signature

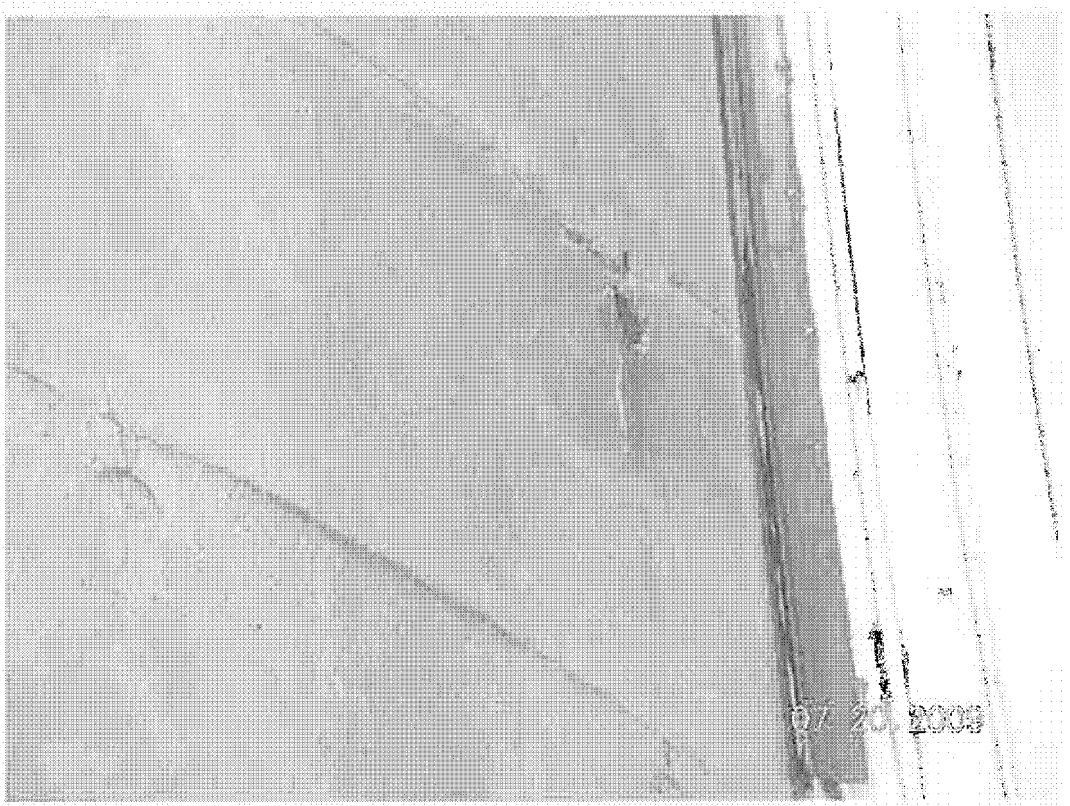
FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 03

ZONE No: 001

No.	Comment	Initials
1	Numerous bugholes, minor vertical and joint cracks, leaching, scaling, and spalling. These are general conditions noted on containment that have NO impact to the structural integrity and fall below the requirement for thorough characterization of indications for future monitoring. However, this condition was noted prior and continues to be note worthy only.	PMB
2	Approximately 2" to 3" pop out at El. 48'-0" no more than 1" deep. See photo U3-017201.	PMB
3	Scaffold connection hole spalled exposing the steel plate backing with surface corrosion and rust staining, approximately 6" x 8" with over 5' long rust stains (previously identified with no significant change). See photo U3-017202.	PMB


07 20 2009
U3-017201
IWL-048-001



IWL-048-001 U3-017202

2001 Inspection Photo

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-04 **Zone No:** 002 **Drawing No.:** ISI-IWL-001

Description: El. 43' – El. 68' **Work Order No:** 138856

Equipment Used: Streamlight – Litebox flashlight **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☐	☒	☐	
Spalls	☐	☐	☒	☐	
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☒	☐	☐	1
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☒	☐	☐	2
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other (bugholes)	☐	☒	☐	☐	1

(Note: Sketches or pictures may be attached to clarify Inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny [signature] Date: 12-16-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable : **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE PINT: INSIDE AUX. BOILER FEED BUILDING

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

ANII Review: [signature] ASBCT Date: 4/15/10
Print/Signature

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 04

ZONE No: 002

No.	Comment	Initials
1	Numerous bugholes, leaching, vertical cracks – all minor with NO impact to structural integrity or warrant the need for further characterization.	PMB
2	Coating is peeling and flaking.	PMB

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-05 **Zone No:** 003 **Drawing No.:** ISI-IWL-001

Description: El. 43' – El. 68' **Work Order No:** 138856

Equipment Used: Streamlight – Litebox flashlight **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☐	☒	☐	
Spalls	☐	☐	☒	☐	
Corrosion staining on concrete surfaces	☐	☒	☐	☐	2
Cracks	☐	☒	☐	☐	3,4
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☐	☒	☐	
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other	☐	☐	☒	☐	

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny [signature] Date: 12-16-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable : **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT: ELEC. PEN. TUNNEL

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

ANII Review: [signature] ASEC Date: 4/15/10
Print/Signature

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 05

ZONE No: 003

No.	Comment	Initials
1	Minor leaching and discoloration.	PMB
2	Visible rust spots with staining behind penetrations H37, H47, and H49.	PMB
3	Patched area has visible cracking.	PMB
4	Cracking with inactive leaching – minor with no significant crack width. See photo U3-037161.	PMB

U3-037161

IWL-048-003

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-06 **Zone No:** 004 **Drawing No.:** ISI-IWL-001

Description: El. 43' – El. 68' **Work Order No:** 138856

Equipment Used: Streamlight – Litebox flashlight **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	6
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☐	☒	☐	
Spalls	☐	☒	☐	☐	2,4,5
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☒	☐	☐	1
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☒	☐	☐	3
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other (bugholes)	☐	☒	☐	☐	3

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny / [signature] Date: 12-16-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable : **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT : PIPE PEN. TUNNEL

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

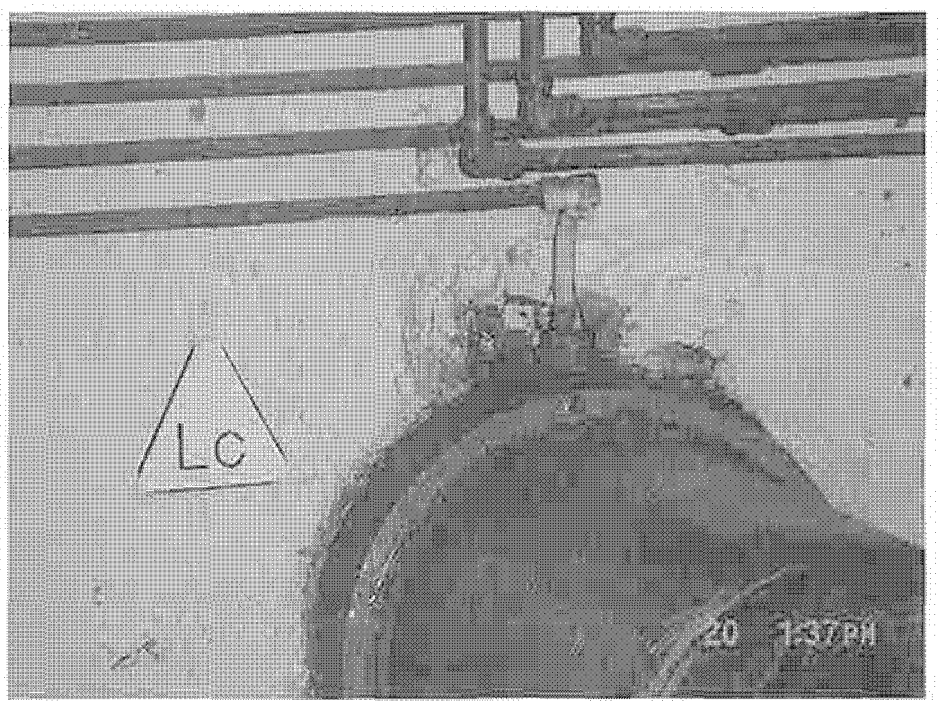
ANII Review: [signature] ASBCT Date: 4/15/10
Print/Signature

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

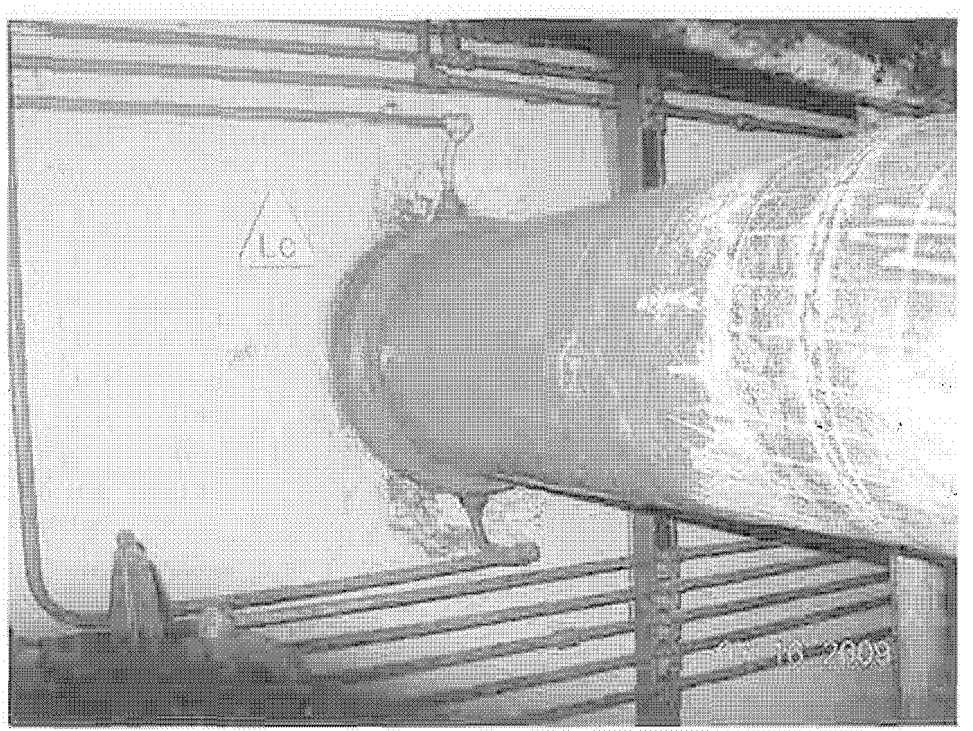
STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 06

ZONE No: 004

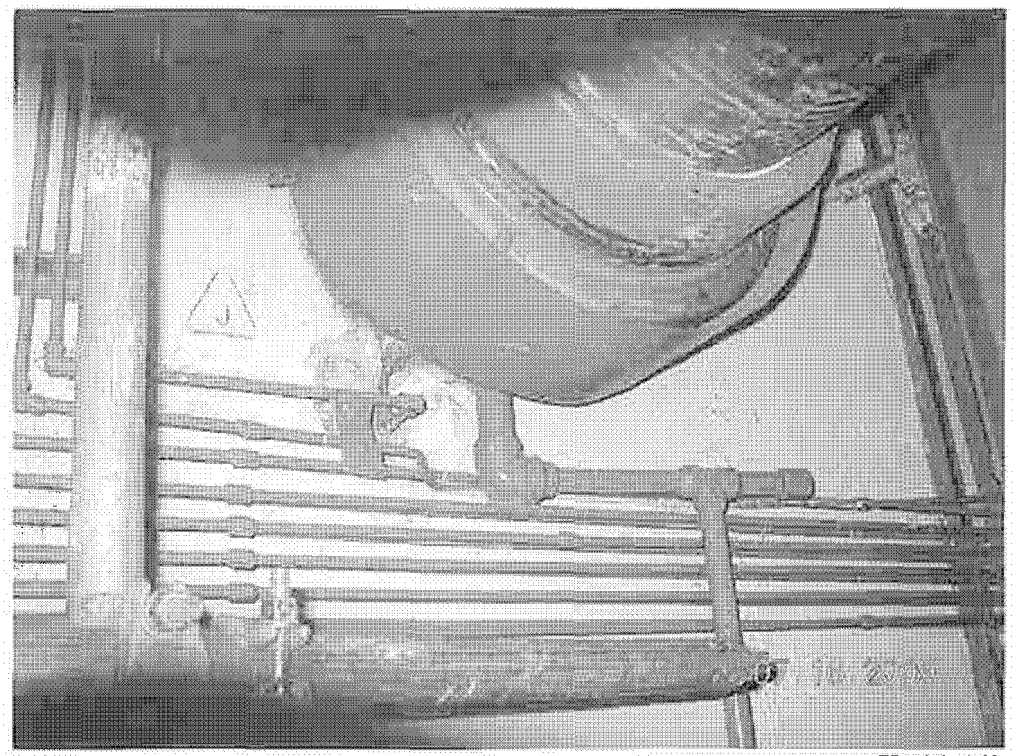
No.	Comment	Initials
1	Minor cracking, less than 1/32" wide, and discoloration.	PMB
2	Spalling, 6"x4"x3" deep, with exposed aggregate around pipe penetration Lc. See photo U3-047162.	PMB
3	General bugholes and coating cracking, flaking, peeling visible from Pipe Penetration Area.	PMB
4	Spalling, 4" x 4", with exposed aggregate around pipe penetration J. See photo U3-047163.	PMB
5	Spalling, approximately 1" out from penetrations PP (180 degrees), Y (180 degrees), and RR (270 degrees).	PMB
6	Localized efflorescent staining throughout the Pipe Penetration Area.	PMB



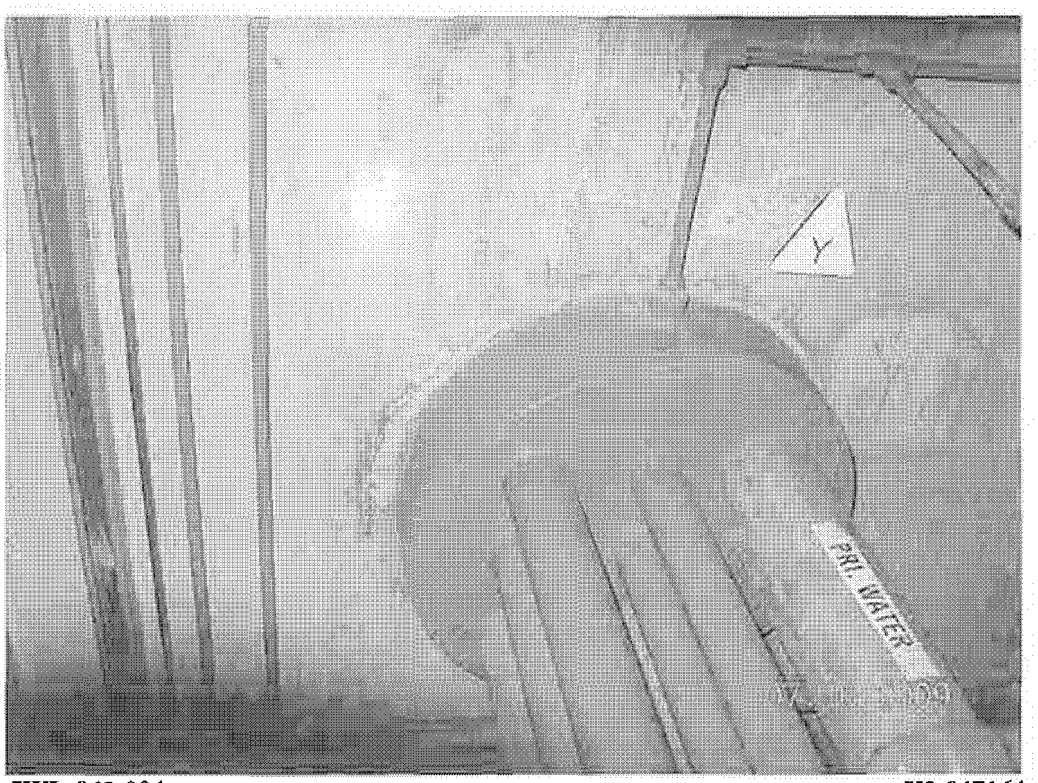
2001 Inspection Photo



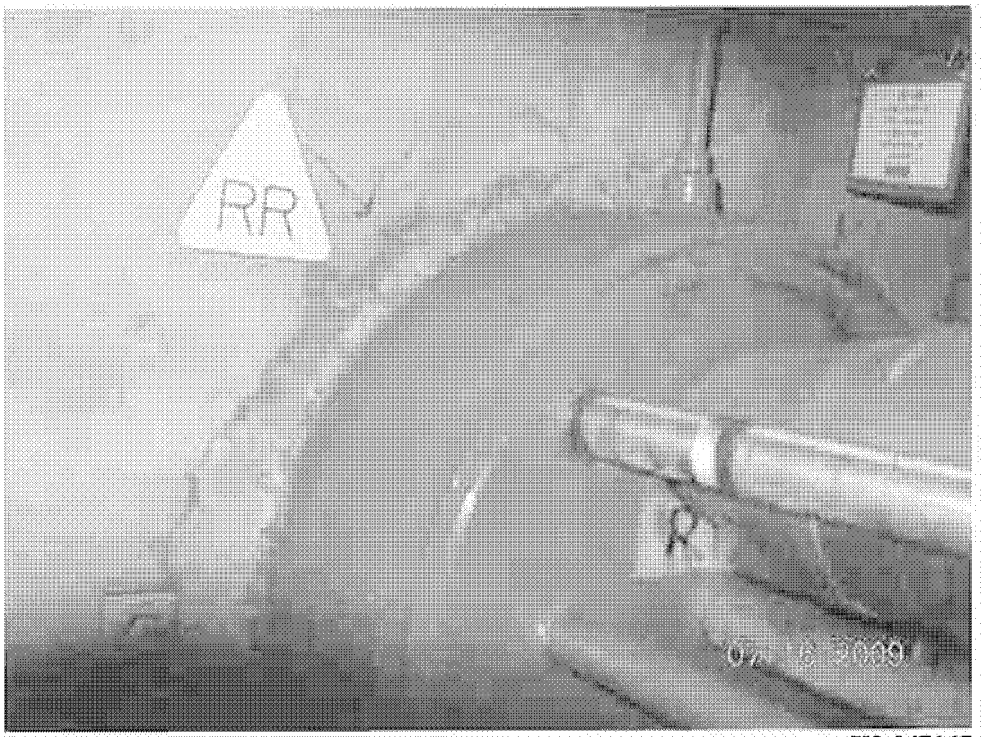
IWL-043-004 **U3-047162**



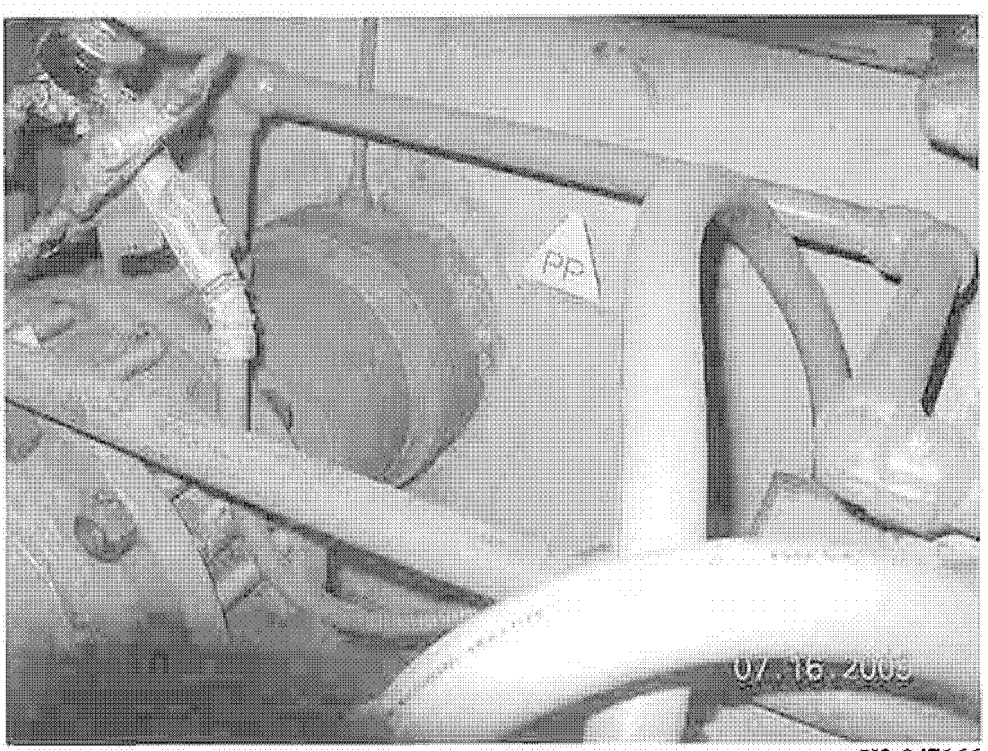
IWL-043-004 U3-047163



IWL-043-004 U3-047164



IWL-043-004 U3-047165



IWL-043-004 U3-047166

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-07 **Zone No:** 001 **Drawing No.:** ISI-IWL-001

Description: El. 68' – El. 88' **Work Order No:** 138856

Equipment Used: Celestron Giant 20x80 Binoculars **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☒	☐	☐	1,2
Spalls	☐	☒	☐	☐	1,2,3
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☒	☐	☐	1
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☐	☐	☒	
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other (bugholes)	☐	☒	☐	☐	1

(Note: Sketches or pictures may be attached to clarify Inspection areas and locations.)

Examined By: P. Bowe / Print/Signature/Level Date: 12/8/09 **Examined By:** J. Skonieczny / Print/Signature/Level Date: 12-16-09

Responsible Engineer Review:

Acceptable: **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT # 9 FROM FIGURE 1 (PG. 20)

RE Signature: R. Drake / Print/Signature/Level Date: 1-6-10

Site Level III Review: N/A Print/Signature/Level Date:

ANII Review: ISBET Print/Signature Date: 4/15/10

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 07

ZONE No: 001

No.	Comment	Initials
1	Numerous bugholes, minor vertical and joint cracks, leaching, scaling, and spalling – all minor and previously identified.	PMB
2	Horizontal and vertical joint intersection with spalling exposing aggregate and scaling. (previously identified)	PMB
3	Numerous areas of 3-4 ft long joint spalls with exposed aggregate. (previously identified)	PMB

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-08 **Zone No:** 002 **Drawing No.:** ISI-IWL-001

Description: El. 68' – El. 88' **Work Order No:** 138856

Equipment Used: Streamlight – Litebox flashlight **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☐	☒	☐	
Scaling	☐	☐	☒	☐	
Spalls	☐	☒	☐	☐	1
Corrosion staining on concrete surfaces	☐	☐	☒	☐	
Cracks	☐	☒	☐	☐	1,2
Exposed reinforcing steel	☐	☐	☒	☐	
Deteriorating of concrete coating, if applicable	☐	☒	☐	☐	4
Excessive corrosion of the exposed embedded metal surfaces	☒	☐	☐	☐	3
Detached embedment or loose bolts	☐	☐	☒	☐	
Other (bugholes)	☐	☒	☐	☐	1

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny [signature] Date: 12-6-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable: **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT: AUX. BOILER FEED BUILDING (INSIDE)

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

ANII Review: [signature] HSBET Date: 4/15/10
Print/Signature

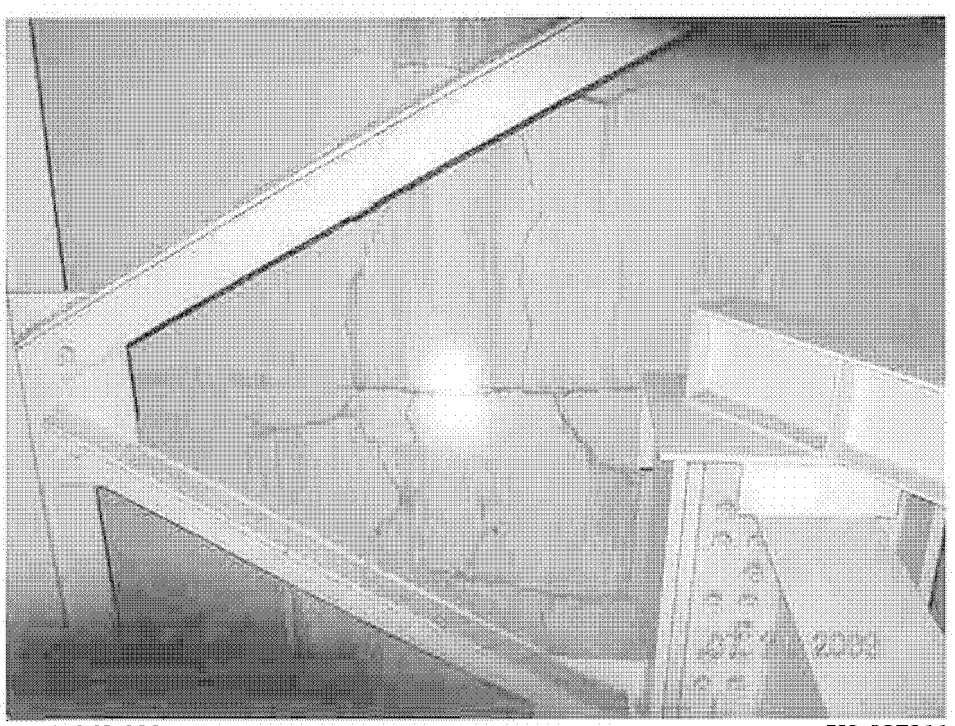
FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 08

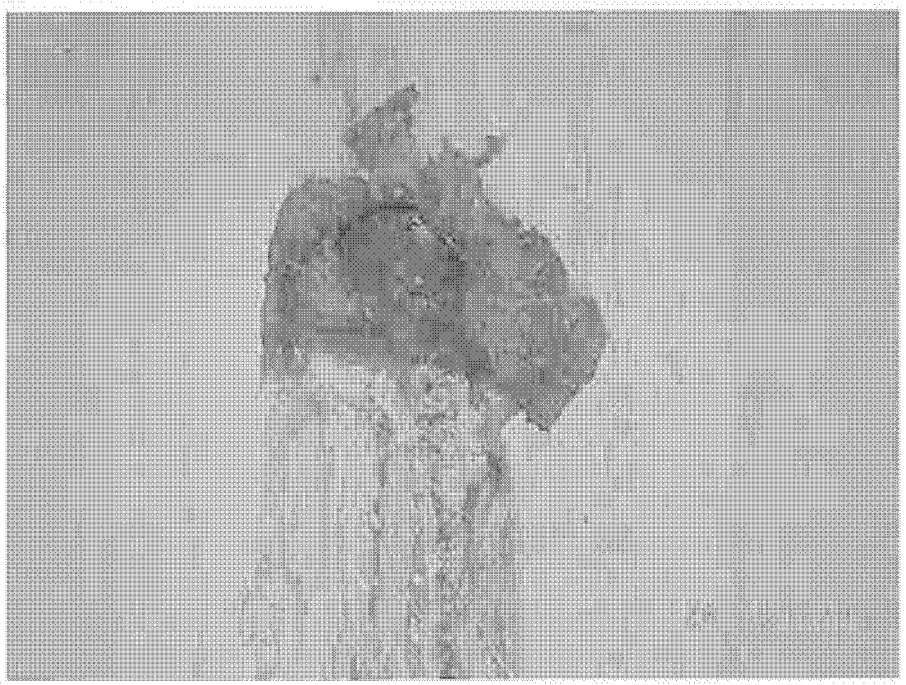
ZONE No: 002

No.	Comment	Initials
1	Numerous bugholes, leaching and vertical cracking – all minor and previously identified	PMB
2	Large pattern cracking and joint cracking, less than 1/16" wide (previously identified). See photo 027211.	PMB
3	Exposed embedded plate, 2" diameter with a 3" diameter spall, with rust staining. No noticeable change since 2001 inspection. See photo U3-027212.	PMB
4	Coating peeling and flaking.	PMB

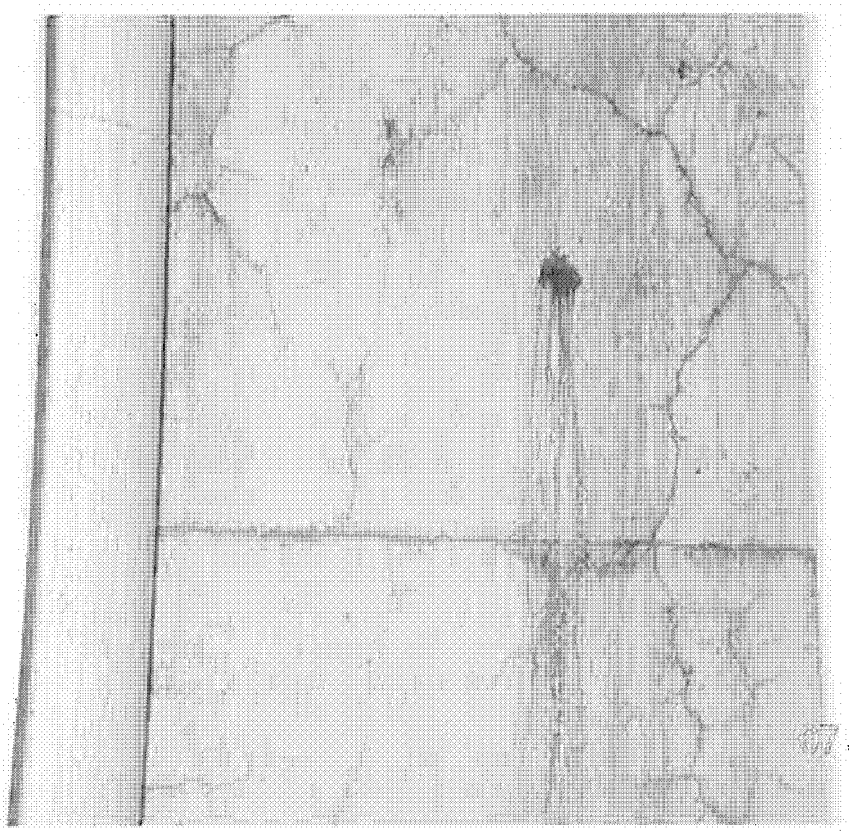
IWL-068-002 U3-026213



IWL-068-002 U3-027211



2001 Inspection Photo



IWL-068-002 U3-027212

CONTAINMENT INSERVICE INSPECTION RECORD OF VT-3/GENERAL VISUAL EXAMINATION

Plant: IPEC – Unit 3 **Interval Period:** 1st/3rd Inspection **Inspection Report No.:** IP3-09-IWL-001

Component No: VCC-09 **Zone No:** 003 **Drawing No.:** ISI-IWL-001

Description: El. 68' – El. 88' **Work Order No:** 138856

Equipment Used: Celestron Giant 20x80 Binoculars **Limitations:** Accessible areas only

Recording Condition	RI	NRI	NI	N/A	Comments
Leaching or chemical attack	☐	☒	☐	☐	1
Abrasion or erosion degradation	☐	☐	☒	☐	
Pop outs and voids	☐	☒	☐	☐	3,5
Scaling	☐	☐	☒	☐	
Spalls	☐	☒	☐	☐	1
Corrosion staining on concrete surfaces	☐	☒	☐	☐	3
Cracks	☐	☒	☐	☐	1
Exposed reinforcing steel	☒	☐	☐	☐	3
Deteriorating of concrete coating, if applicable	☐	☐	☐	☒	
Excessive corrosion of the exposed embedded metal surfaces	☐	☐	☒	☐	
Detached embedment or loose bolts	☐	☐	☒	☐	
Other (bugholes, exposed aggregate)	☐	☒	☐	☐	1,4

(Note: Sketches or pictures may be attached to clarify inspection areas and locations.)

Examined By: P. Bowe / [signature] Date: 12/8/09 **Examined By:** J. Skonieczny [signature] Date: 12-8-09
Print/Signature/Level Print/Signature/Level

Responsible Engineer Review:

Acceptable: **Yes** ☒ **No** ☐ (Detailed VT-1 Examination Required Attachment 7.3)

Comments: VANTAGE POINT # 5 FROM FIGURE 1 ON PG 20

RE Signature: R. Drake / [signature] Date: 1-6-10
Print/Signature/Level

Site Level III Review: N/A Date:
Print/Signature/Level

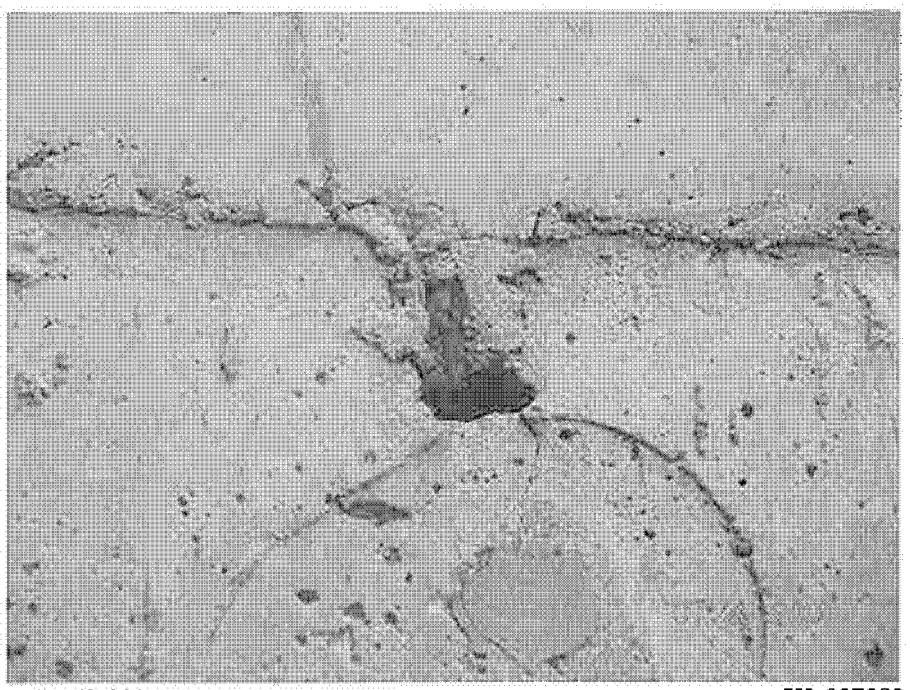
ANII Review: [signature] ASBET Date: 4/15/10
Print/Signature

FORM VT – 3C
CONTAINMENT INSERVICE INSPECTION
RECORD OF VT – 3 /GENERAL VISUAL EXAMINATION

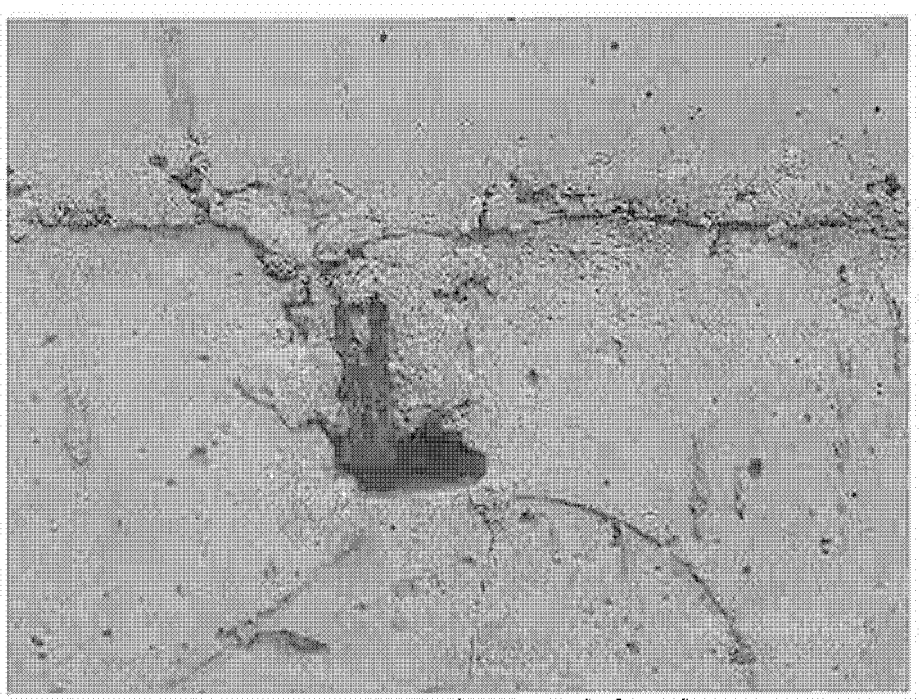
STATION/UNIT: IPEC / Indian Point No. 3 COMPONENT NO. : VCC – 09

ZONE No: 003

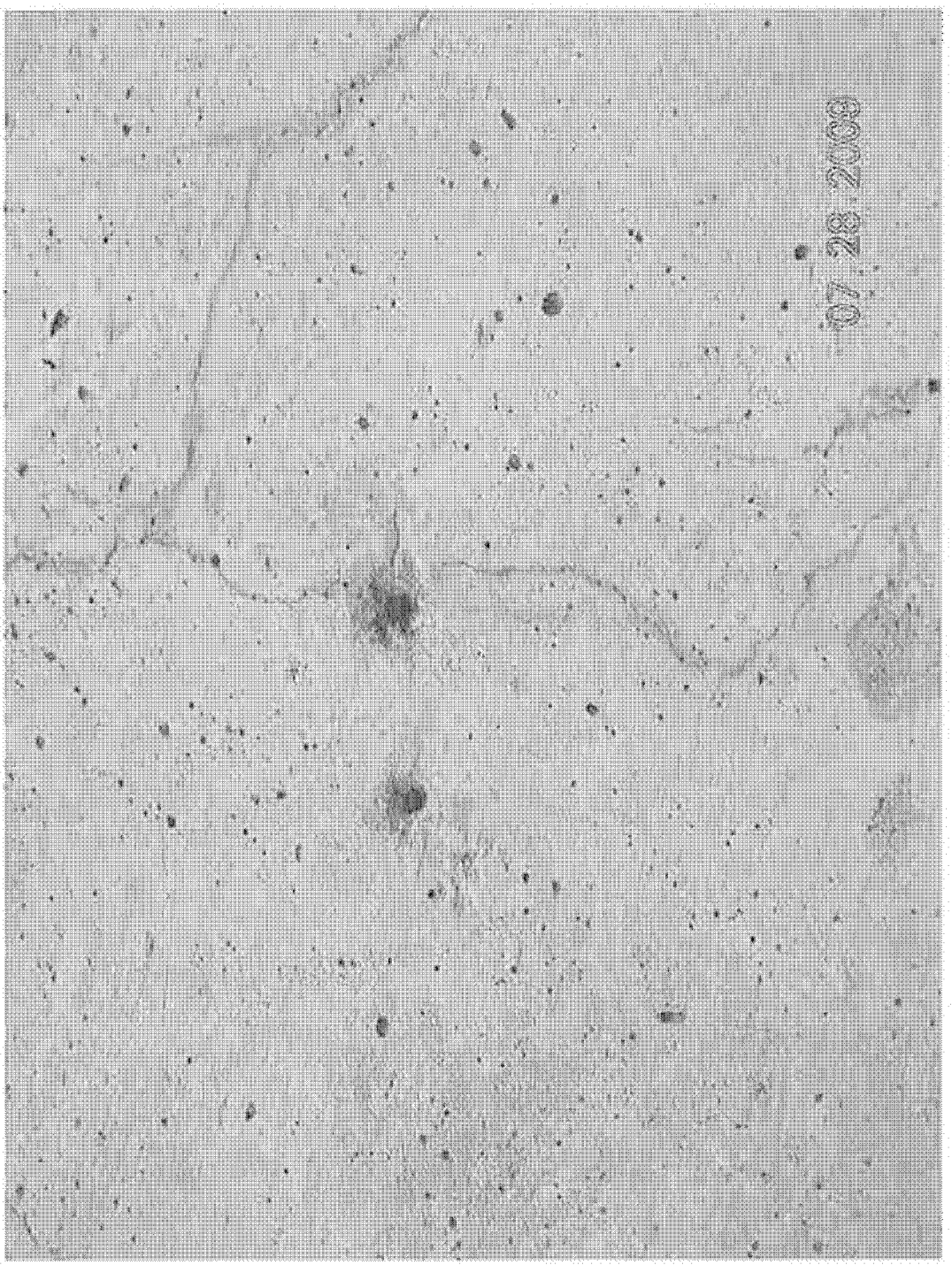
No.	Comment	Initials
1	Numerous bugholes, leaching, spalling and cracking – all minor and previously identified.	PMB
2	Void with rust and staining. This indication based on previous inspection photos is located in the Auxiliary Feedwater Building and therefore is being moved to zone 2 based on containment rollout drawing ISI-IWL-001. See component no. VCC-08 for comparative photos.	PMB
3	Two 1" diameter pop outs with exposed rebar and minor rust staining. The indications are visible from Electrical Tunnel roof, located at El. 80'-0". See photo U3-037283.	PMB
4	Two areas of exposed aggregate, 12" x 4" and 12" x 6", visible from Electrical Tunnel roof. See photos U3-037284 & U3-037285.	PMB
5	Void from wood removal during 2001 inspection, 2" x 1" x 3" deep, and a piece of exposed metal, 2" x 1", with surface corrosion and staining, immediately adjacent. The indication is visible from Electrical Tunnel roof, located at El. 73'-0". See photo U3-037282.	PMB



IWL-68-003 U3-037282



2001 Inspection during removal of wood



U3-037283

IWL-068-003