



**ENTERGY NUCLEAR NORTHEAST  
Engineering Report Cover Sheet**

**Engineering Report Title:**

**IP3 ASME SECTION XI,  
IWL CONCRETE CONTAINMENT INSPECTION  
FOR 2005**

**Engineering Report Type:**

New  Revision  Cancelled  Superseded

**Applicable Site(s)**

IP1  IP2  IP3  JAF  PNPS  VY  WPO   
ANO1  ANO2  ECH  GGNS  RBS  WF3

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Date: 3/29/06

\*: 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 2<sup>nd</sup> period of the 1<sup>st</sup> interval, and complements report 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(+)-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.

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### 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 55 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.



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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 May 5, 2005 at a distance of 210 feet using a neutral gray card in natural light. This test was witnessed by Mark Gettlemen, Dragos Nuta, and Paul Bowe and achieved the acuity listed in IWA Table 2210-1 VT-3. The Streamlight (Litebox) was measured on July 30, 2005 by Dragos Nuta.

### 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 with the exception of a small portion at the top of the dome. The entire top of the containment building dome was visible from the top of the IP1 stack, with the exception of a small wedge shape section on the SE side behind the Plant vent. The sides and slope of the dome were visible from the lower ground locations. The only portions that were inaccessible are the small wedge on top of the dome, 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.

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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

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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 reinforcing 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.

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## 5.0 Summary of Results


The exterior inspection of the Unit 3 Containment Building was recently completed to fulfill the second 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. Photos throughout the report do not show the same level of detail as were seen in the field due to lesser zoom capabilities by the camera in use.

The previous inspection, 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 five years. Those findings that have further degraded, such as spall areas increasing and further leaching, 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 inspection findings show no signs of further degradation and only require further monitoring at the next scheduled inspection.

During the 2005 IWL inspection, several general typical concrete conditions were identified throughout the structure. Numerous areas of hairline cracks, joint cracks, and vertical cracks appear on the surface, but all cracks have been identified as tight and non-active without any signs of rust staining coming from them (similar to previous inspection). The majority of the structure has signs of leaching and 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 photos U3-036215 and U3-066093. The major contributors to rust staining on the VC are the lightning arrestors, the 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. However, the new findings of exposed rebar and voids with rust staining are part of the scope, but do not appear to be excessive or require any repairs at this time. The exposed rebar seems to be the result of improper concrete coverage during initial construction. Little spalls and popouts uncovering rebar exist at various elevations on containment, and

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repairing them for cosmetic purposes alone, is impractical. Therefore, future monitoring to assure no drastic further degradation occurs shall be sufficient.

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 oppose an immediate threat to containment integrity. Further major degradation should not appear before the next 5 year inspection.

## 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. Furthermore, all repairs that would be required to correct all findings are cosmetic and have not been addressed by condition reports or work orders due to the accessibility of the containment surface. Pending any major changes warranting early inspection, all findings require further monitoring at the next 5 year inspection, only.


## 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).

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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, for the concrete paste. This condition normally occurs at locations of high moisture penetration and flow, such as cracks.

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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

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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 AP-39 "IP3 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"



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- 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

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**Indian Point 3  
Nuclear Power Plant**

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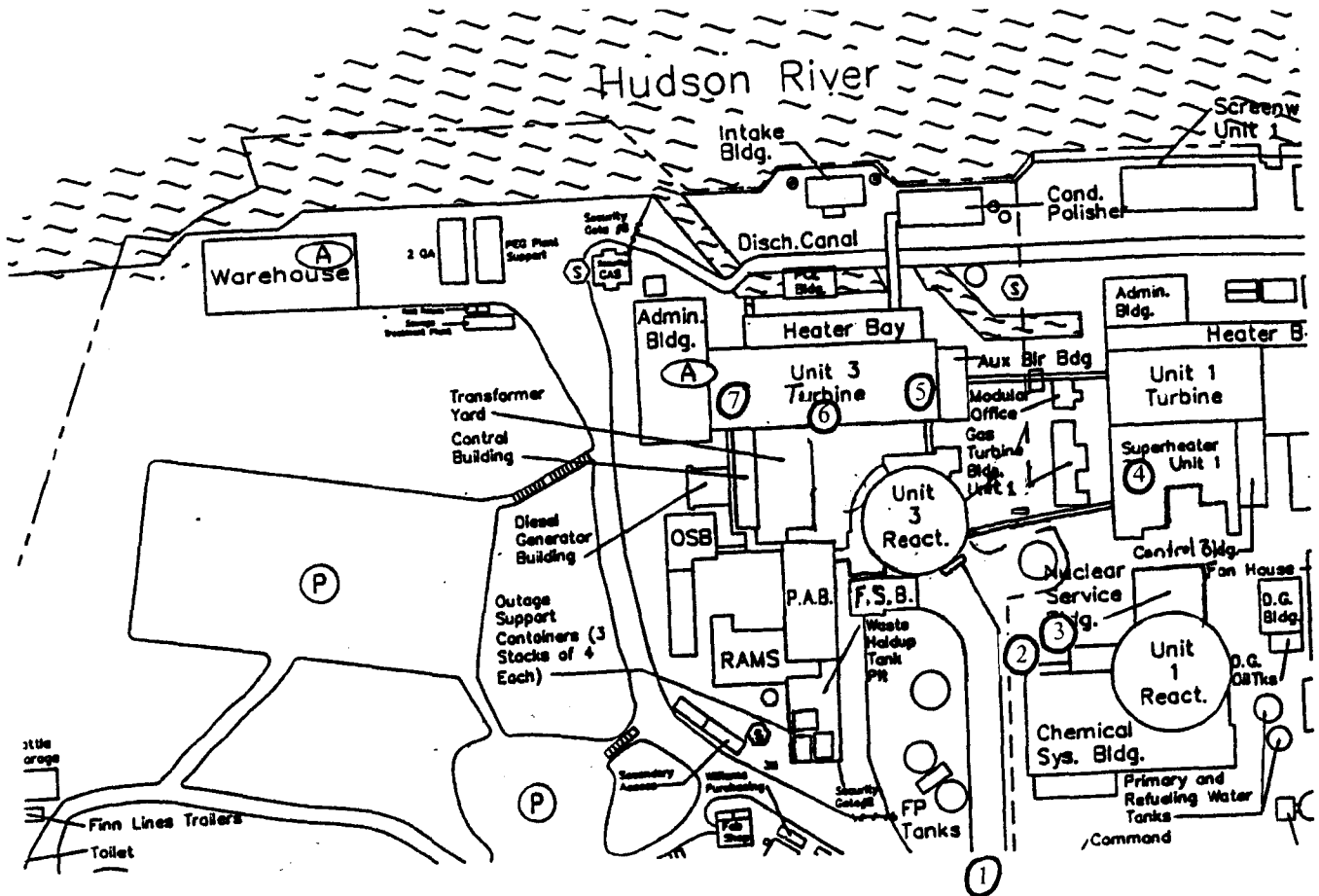


**ATTACHMENT 8.1  
FIGURES AND DRAWINGS**

# ATTACHMENT 8.1

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**FIGURE 1**

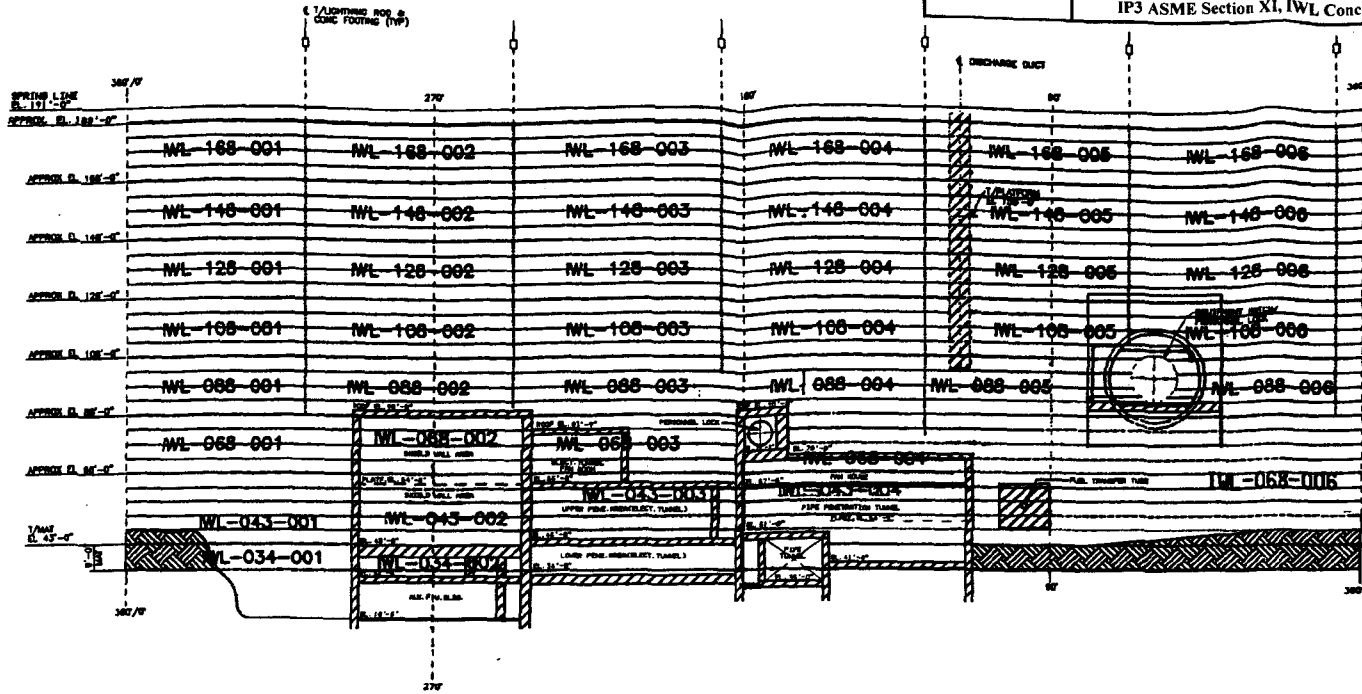


VIEW POINT LOCATIONS

1. Hatch Access Road – Inspected parts of zone 5 from this location.
2. Southwest Corner near Nitrogen Tanks – Inspected parts of zone 5 and 6 from this location.
3. Near Nitrogen Tanks (just north of position 2) – Inspected parts of zone 6 from this location.
4. Roof of Unit 1 Superheater Building (south end) – Inspected zone 1 from this location.
5. Roof of Unit 3 Turbine Building (northeast end) – Inspected zone 2 from this location.
6. Roof of Unit 3 Turbine Building (east side) – Inspected zone 3 from this location.
7. Roof of Unit 3 Turbine Building (southeast end) – Inspected zone 4 from this location.

NOTE: Although not shown on Figure 1, the dome was inspected from the Unit 1 Stack.

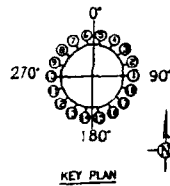
ATTACHMENT 8.1



- REFERENCE DWGS:
- 9321-F-10331
  - 9321-F-11573
  - 9321-F-12113
  - 9321-F-12123
  - 9321-F-12133
  - 9321-F-12143
  - 9321-F-12153
  - 9321-F-12163
  - 9321-F-12083
  - 9321-F-12103
  - 9321-F-14213
  - 9321-F-14223
  - 9321-F-14233
  - 9321-F-14703
  - 9321-F-14713
  - 9321-F-11983

CONCRETE ROLLOUT  
(EXTERIOR DEVELOPED VIEW, LOOKING FROM OUTSIDE)

- NOTES:  
1. ZONE BOUNDARIES ARE ESTABLISHED AT LOCATIONS OF CONCRETE POUR CONSTRUCTION JOINTS WHICH ARE SPACED AT APPROXIMATELY 5'-0".
- LEGEND:
- ZONE BOUNDARY
  - PENETRATION
  - CONSTRUCTION JOINT
  - EXPOSED CONCRETE FILL AREA
  - MW-XXX-YYY INSPECTION ZONE NUMBER
  - ▨ CONCRETE SURFACE OF V.C. INACCESSIBLE (EARTH BACKFILL, ROCK, OR BELOW GRADE)
  - ▨ CONCRETE SURFACE OF V.C. INACCESSIBLE (WALLS, FLOOR SLABS, OR EQUIPMENT)

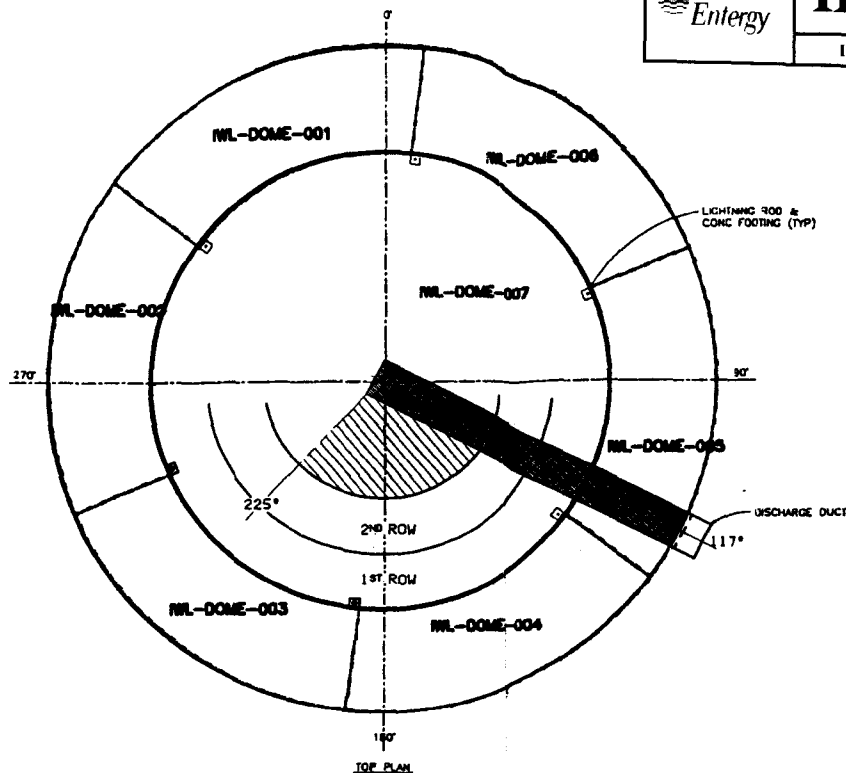


REV NO	DATE	DESCRIPTION	BY	CHK	APP
2	1/14	REVISED PER DCR-100161938			
1	10/11/05	ORIGINAL ISSUE FOR DCR-100159488			

DESIGN	CHK'D	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DES SURV		
DISCIPLINE END		
DISCIPLINE DIR		
PROJ APPROVAL		CONTAINMENT CONCRETE ROLL-OUT DRAWING ELEV. 34'-0" TO 191'-0"
DATE		
		SCALE: NONE
<b>Entergy</b> Nuclear Northeast		DWG NO: ISI-IWL-001
		REV: 2
		SHEET

IPEC00194370

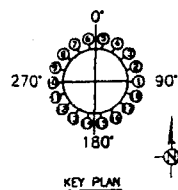
ATTACHMENT 8.1



**CONCRETE DOME**  
(EXTERIOR PROJECTED VIEW, LOOKING FROM TOP)

NOTES:  
1. REFERENCE DESIGN DRAWING NUMBERS  
Y821-P-11968, Y821-P-12013 & Y821-P-13119

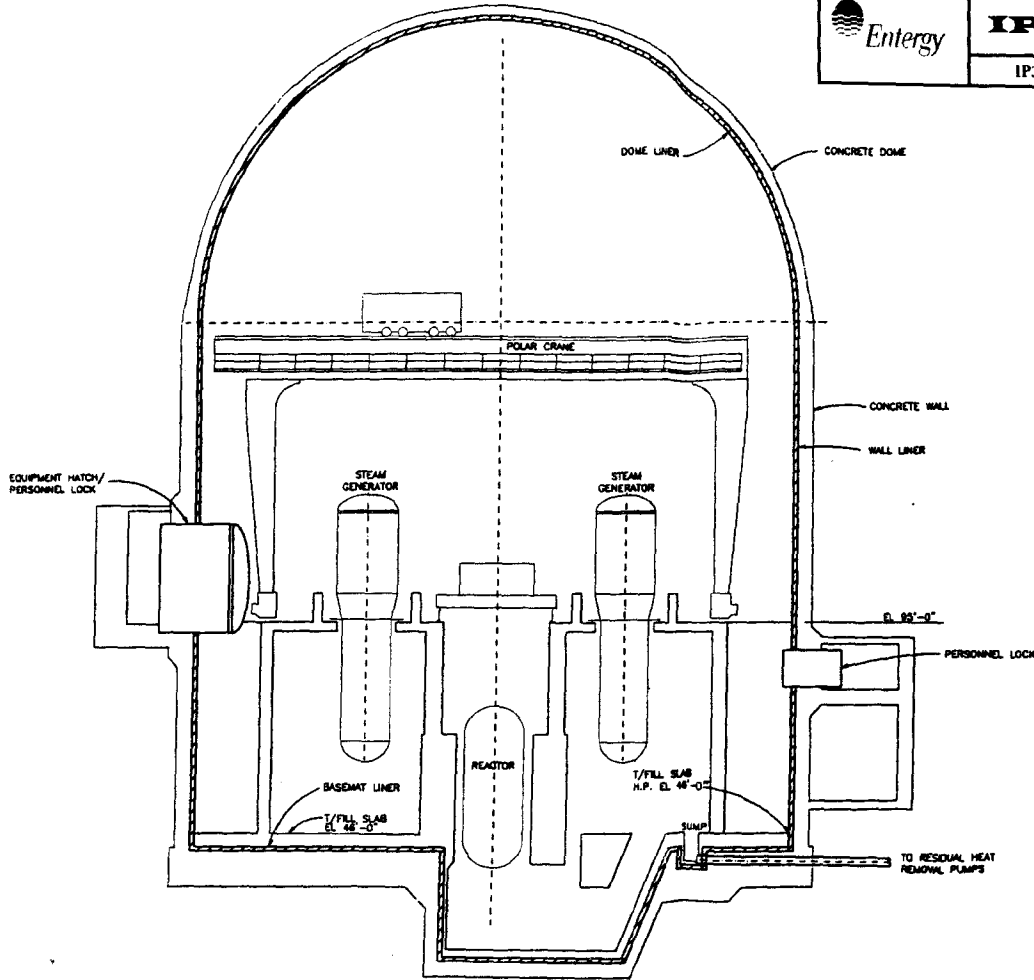
LEGEND:  
 CONCRETE SURFACE INACCESSIBLE  
 ZONE BOUNDARY  
 IWL-XXX-YYY INSPECTION ZONE NUMBER  
 CONCRETE SURFACE OF V.C. DOME INACCESSIBLE FROM AN EXISTING VANTAGE LOCATION



DATE	DATE	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DESIGN	DATE	CONTAINMENT CONCRETE DOME PLAN, ABOVE ELEV. 191'-0"
DISCIPLINE ENG	DATE	
PREP APPROVAL	DATE	
SCALE: NONE	DWG NO	REV
	ISI-IWL-002	2

REV NO	DATE	DESCRIPTION	DES	CHK'D	APP
2	10/10/05	REVISED PER DCR-100161939			
1	12/11/04	ORIGINAL ISSUE FOR DCR-100159489			


ATTACHMENT 8.1




**CONTAINMENT ISI GENERAL ARRANGEMENT**

NOTE:  
1. ORIENTATION OF EQUIPMENT HATCH AND PERSONNEL LOCKS ARE NOT SHOWN TO TRUE AZIMUTH.

REV NO	DATE	DESCRIPTION	DES	CHK	APP	DATE
2	4/10	REVISED PER DCR-100161940				
1	8/19/06	ORIGINAL ISSUE FOR DCR-130159490				

DESIGN	DES SUPV	INDIAN POINT NO. 3 NUCLEAR POWER PLANT
DISCIPLINE	ENG	
DISCIPLINE	DIR	
PROJ APPROVAL		
DATE		
		SCALE: NONE
		DWG NO
		ISI-IWL-003
		SHEET
		2

IPEC00194372

	<b>IPEC</b>	IP-RPT-06-00013	REV. 0
			Page 1 of 124
IP3 ASME Section XI, IWL Concrete Containment Inspection for 2005			

**Indian Point 3  
Nuclear Power Plant**

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**ATTACHMENT 8.2  
INSPECTION REPORTS**

**FINDINGS SUMMARY:**

**INSPECTION #: IP3-05-IWL-001**

<b>ZONE NUMBER</b>	<b>ELEVATION</b>	<b>ACCEPTABLE</b>	<b>ACCEPTABLE WITH DEGR.</b>	<b>UNACCEPTABLE</b>	<b>REMARKS</b>
001	34' - 43'	X			
002	34' - 43'	X			
001	43' - 68'	X			
002	43' - 68'	X			
003	43' - 68'	X			
004	43' - 68'		X		Flaking w/ exposed aggregate. Needs future monitoring only.
001	68' - 88'		X		3' - 4' long joint spalls w/ exposed aggregate. Depth of spalls are not a concern, future monitoring only.
002	68' - 88'	X			
003	68' - 88'		X		Small void with rust and staining. Repair not required at this time.
004	68' - 88'	X			
006	68' - 88'		X		Void with exposed rebar tip, rusting, and staining.
001	88' - 108'	X			
002	88' - 108'	X			



**FINDINGS SUMMARY:**

**INSPECTION #: IP3-05-IWL-001**

<b>ZONE NUMBER</b>	<b>ELEVATION</b>	<b>ACCEPTABLE</b>	<b>ACCEPTABLE WITH DEGR.</b>	<b>UNACCEPTABLE</b>	<b>REMARKS</b>
003	88' - 108'	X			
004	88' - 108'	X			
005	88' - 108'	X			
006	88' - 108'	X			
001	108' - 128'	X			
002	108' - 128'		X		Spalls, approximately 1-3" long and less than 1/2" wide, some exposing rebar. Regularly scheduled monitoring required.
003	108' - 128'		X		6" long exposed rebar, roughly 1/2" wide with minor rust staining. Spall size should be reviewed at next inspection.
004	108' - 128'	X			
005	108' - 128'	X			
006	108' - 128'		X		Exposed rebar tip and embedded pipe with rust and staining.
001	128' - 148'	X			
002	128' - 148'	X			
003	128' - 148'	X			

**FINDINGS SUMMARY:**


**INSPECTION #: IP3-05-IWL-001**

<b>ZONE NUMBER</b>	<b>ELEVATION</b>	<b>ACCEPTABLE</b>	<b>ACCEPTABLE WITH DEGR.</b>	<b>UNACCEPTABLE</b>	<b>REMARKS</b>
004	128' - 148'	X			
005	128' - 148'	X			
006	128' - 148'	X			
001	148' - 168'	X			
002	148' - 168'	X			
003	148' - 168'	X			
004	148' - 168'	X			
005	148' - 168'	X			
006	148' - 168'	X			
001	168' - 188'	X			
002	168' - 188'	X			
003	168' - 188'	X			
004	168' - 188'	X			

**FINDINGS SUMMARY:**

**INSPECTION #: IP3-05-IWL-001**

<b>ZONE NUMBER</b>	<b>ELEVATION</b>	<b>ACCEPTABLE</b>	<b>ACCEPTABLE WITH DEGR.</b>	<b>UNACCEPTABLE</b>	<b>REMARKS</b>
005	168' - 188'	X			
006	168' - 188'	X			
001	DOME	X			
002	DOME	X			
003	DOME	X			
004	DOME	X			
005	DOME	X			
006	DOME	X			

	ENN NUCLEAR MANAGEMENT MANUAL	ENGINEERING STANDARD	ENN-EP-S-003 Revision 0
		IWL Visual Containment Inspection	Page 13 of 15

Attachment 7.1

DEMONSTRATION OF REMOTE EXAMINATION METHOD

IPEC Unit: 3

Date: 05/09/2005

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 210 feet from the binoculars which were mounted on a tripod.

The weather conditions were clear, with bright sunlight.

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

LIMITATIONS:

Demonstration Performed By:

Signature: [Signature] Date: 6/2/05

Demonstration Witnessed By:

Signature: [Signature] Date: 6/2/05

Responsible Engineer Review:


Signature: [Signature] Date: 6/2/05

Site Level III Review:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Authorized Nuclear Inspector (ANII) Review:

Signature: [Signature] Date: 4/21/06  
H. B. C.

	ENN NUCLEAR MANAGEMENT MANUAL	ENGINEERING STANDARD	ENN-EP-S-003 Revision 0
		IWL Visual Containment Inspection	Page 13 of 15

Attachment 7.1

DEMONSTRATION OF REMOTE EXAMINATION METHOD

IPEC Unit: 3

Date: 6/01/2005

EQUIPMENT USED:

Streamlight (Lightbox), Serial Number 037510.

Illuminance Meter DLM2, ID No. IP3M-0619-0003 Calibration Due Date of 07/30/05.

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 55-60 ft-candle was achieved at a distance of 20 feet using the DLM2 Illuminance Meter. The acceptable illuminance is 50 ft-candle at 20 feet. Background light intensity was in the 5 ft-candle range.

LIMITATIONS:

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

Demonstration Performed By:

Signature: [Signature] Date: 6/2/05

Demonstration Witnessed By:

Signature: [Signature] Date: 6/2/05

Responsible Engineer Review:

Signature: [Signature] Date: 6/2/05

Site Level III Review:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Authorized Nuclear Inspector (ANI) Review:

Signature: [Signature] Date: 6/21/06

**Attachment 7.2 of ENN-EP-S-003, Rev. 0**  
**CONTAINMENT INSERVICE INSPECTION**  
**RECORD OF VT-3 / GENERAL VISUAL EXAMINATION**

IPEC Unit: 3 Interval Period: 1<sup>st</sup>/2<sup>nd</sup> Inspection Inspection Report No.: IP3-O5-IWL-001

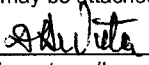

Component No.: VCC - 01 Zone No: 001 Drawing No.: \_\_\_\_\_

Description: El. 34 – El. 43 Work Order No: IP3-03-22881

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

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

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

Examined By: D. Nuta  Date: 7/11/05 Examined By: P. Bowe  Date: 7/11/05  
Print/Signature/Level Print/Signature/Level

**Responsible Engineer Review:**

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

**Comments:** \_\_\_\_\_

**RE Signature** Richard Duke  Date: 7/14/05  
Print/Signature/Level

**Site Level III Review:** \_\_\_\_\_ Date: \_\_\_\_\_  
Print/Signature/Level

**ANII Review:** Not Applicable Date: \_\_\_\_\_  
Print/Signature



**Attachment 7.2 of ENN-EP-S-003, Rev. 0**  
**CONTAINMENT INSERVICE INSPECTION**  
**RECORD OF VT-3 / GENERAL VISUAL EXAMINATION**

**IPEC Unit:** 3 **Interval Period:** 1<sup>st</sup>/2<sup>nd</sup> Inspection **Inspection Report No.:** IP3-O5-IWL-001  
**Component No.:** VCC - 02 **Zone No:** 002 **Drawing No.:** \_\_\_\_\_  
**Description:** El. 34 – El. 43 **Work Order No:** IP3-03-22881  
**Equipment Used:** Streamlight – Litebox flashlight **Limitations:** Accessible areas only

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

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

**Examined By:** D. Nuta *[Signature]* **Date:** 7/11/05 **Examined By:** P. Bowe *[Signature]* **Date:** 7/11/05  
Print/Signature/Level Print/Signature/Level

**Responsible Engineer Review:**

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

**Comments:** \_\_\_\_\_

**RE Signature:** *[Signature]* **Date:** 7/19/05  
Print/Signature/Level

**Site Level III Review:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
Print/Signature/Level

**ANII Review:** Not Applicable **Date:** \_\_\_\_\_  
Print/Signature





**Attachment 7.2 of ENN-EP-S-003, Rev. 0**  
**CONTAINMENT INSERVICE INSPECTION**  
**RECORD OF VT-3 / GENERAL VISUAL EXAMINATION**

IPEC Unit: 3 Interval Period: 1<sup>st</sup>/2<sup>nd</sup> Inspection Inspection Report No.: IP3-05-IWL-001

Component No.: VCC - 03 Zone No: 001 Drawing No.: \_\_\_\_\_

Description: El. 43 – El. 68 Work Order No: IP3-03-22881

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

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

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

Examined By: D. Nuta *D. Nuta* Date: 7/11/05 Examined By: P. Bowe *P/B* Date: 7/11/05  
Print/Signature/Level Print/Signature/Level

**Responsible Engineer Review:**

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

**Comments:** \_\_\_\_\_

**RE Signature** *Richard Drake* Date: 7/14/05  
Print/Signature/Level

**Site Level III Review:** \_\_\_\_\_ Date: \_\_\_\_\_  
Print/Signature/Level

**ANII Review:** Not Applicable Date: \_\_\_\_\_  
Print/Signature



**Attachment 7.2 of ENN-EP-S-003, Rev. 0**  
**CONTAINMENT INSERVICE INSPECTION**  
**RECORD OF VT-3 / GENERAL VISUAL EXAMINATION**

IPEC Unit: 3 Interval Period: 1<sup>st</sup>/2<sup>nd</sup> Inspection Inspection Report No.: IP3-O5-IWL-001

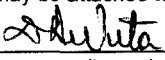
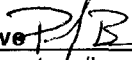
Component No.: VCC - 04 Zone No: 002 Drawing No.: \_\_\_\_\_

Description: El. 43 – El. 68 Work Order No: IP3-03-22881

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

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

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

Examined By: D. Nuta  Date: 7/11/05 Examined By: P. Bowe  Date: 7/11/05  
Print/Signature/Level Print/Signature/Level

**Responsible Engineer Review:**

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

**Comments:** \_\_\_\_\_

RE Signature: Richard Dale  Date: 7/14/05  
Print/Signature/Level

Site Level III Review: \_\_\_\_\_ Date: \_\_\_\_\_  
Print/Signature/Level

ANII Review: Not Applicable Date: \_\_\_\_\_  
Print/Signature



**Attachment 7.2 of ENN-EP-S-003, Rev. 0**  
**CONTAINMENT INSERVICE INSPECTION**  
**RECORD OF VT-3 / GENERAL VISUAL EXAMINATION**

IPEC Unit: 3 Interval Period: 1<sup>st</sup>/2<sup>nd</sup> Inspection Inspection Report No.: IP3-O5-IWL-001

Component No.: VCC - 05 Zone No: 003 Drawing No.: \_\_\_\_\_

Description: EI. 43 – EI. 68 Work Order No: IP3-03-22881

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

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

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

Examined By: D. Nuta *[Signature]* Date: 7/11/05 Examined By: P. Bowe *[Signature]* Date: 7/14/05  
Print/Signature/Level Print/Signature/Level

**Responsible Engineer Review:**

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

Comments: \_\_\_\_\_

RE Signature Richard Drake *[Signature]* Date: 7/14/05  
Print/Signature/Level

Site Level III Review: \_\_\_\_\_ Date: \_\_\_\_\_  
Print/Signature/Level

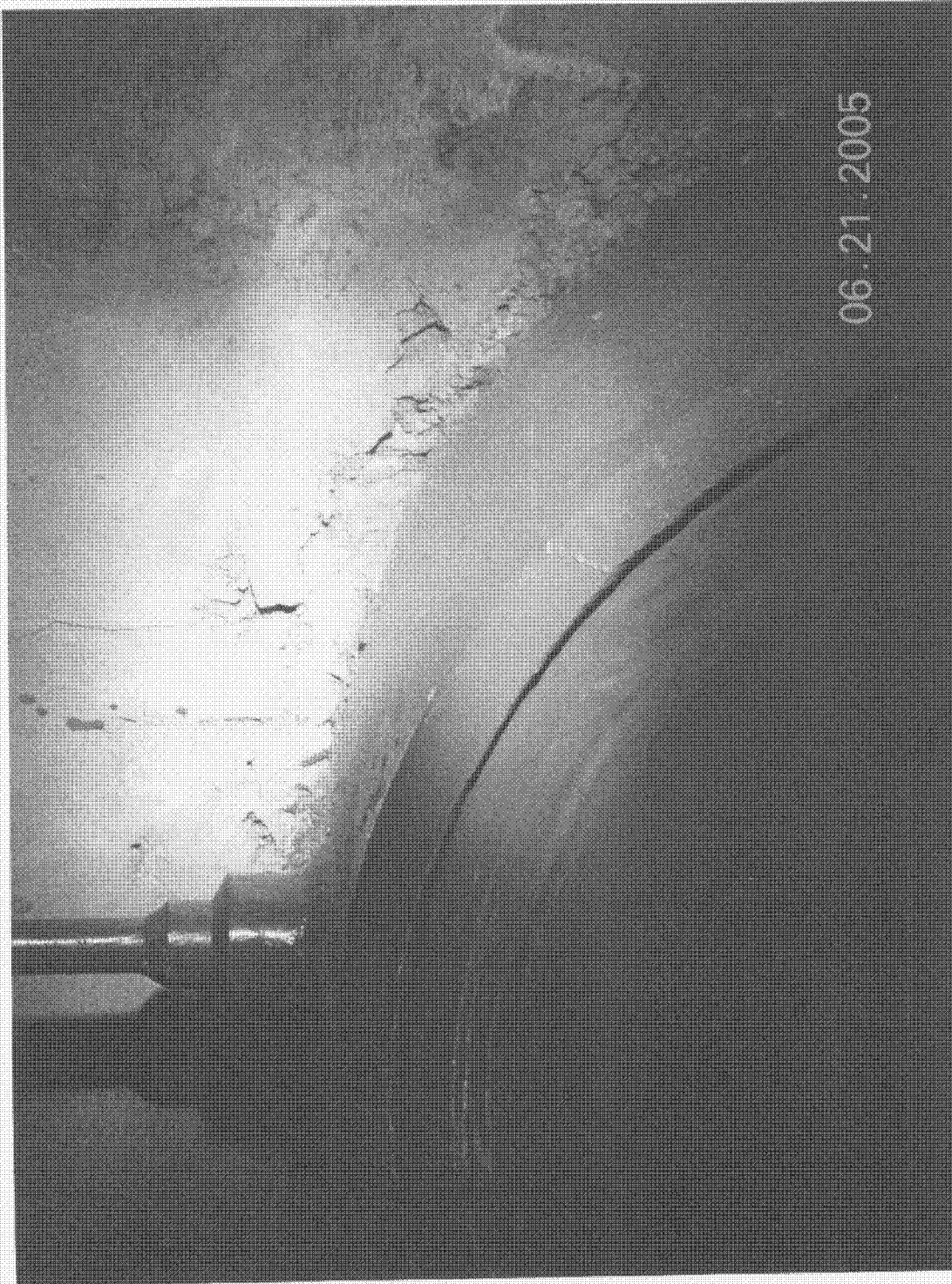
ANII Review: \_\_\_\_\_ Not Applicable \_\_\_\_\_ Date: \_\_\_\_\_  
Print/Signature











06.21.2005

U3-046211

IWL-043-004



06.21.2005

U3-046212

IWL-043-004

**Attachment 7.2 of ENN-EP-S-003, Rev. 0  
CONTAINMENT INSERVICE INSPECTION  
RECORD OF VT-3 / GENERAL VISUAL EXAMINATION**

IPEC Unit: 3 Interval Period: 1<sup>st</sup>/2<sup>nd</sup> Inspection Inspection Report No.: IP3-O5-IWL-001

Component No.: VCC - 07 Zone No: 001 Drawing No.: \_\_\_\_\_

Description: El. 68 – El. 88 Work Order No: IP3-03-22881

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

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

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

Examined By: D. Nuta *D. Nuta* Date: 7/11/05 Examined By: P. Bowe *P. Bowe* Date: 7/11/05  
Print/Signature/Level Print/Signature/Level

**Responsible Engineer Review:**

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

**Comments:**

RE Signature Richard Dale *Richard Dale* Date: 7/14/05  
Print/Signature/Level

Site Level III Review: \_\_\_\_\_ Date: \_\_\_\_\_  
Print/Signature/Level

ANIL Review: Not Applicable Date: \_\_\_\_\_  
Print/Signature











U3-026213

IWL-068-002





U3-026214

IWL-068-002





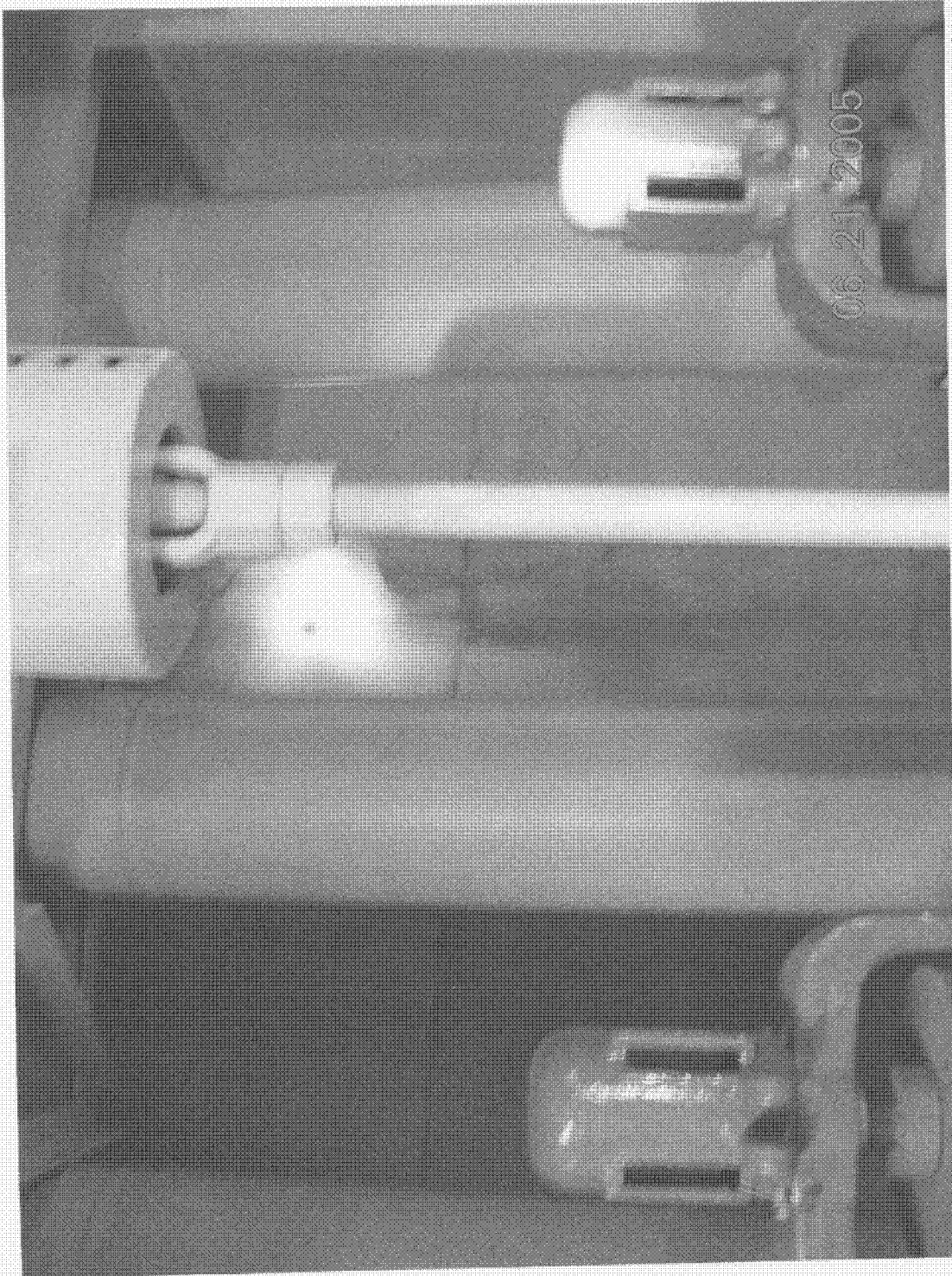


06.21.2005

U3-036215

IWL-068-003





U3-036216

IWL-068-003