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GPU NUCLEAR
THIRD INTERVAL
INSERVICE INSPECTION PROGRAM UPDATE
FOR
THE OYSTER CREEK NUCLEAR GENERATING STATION
JERSEY CENTRAL POWER & LIGHT COMPANY

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INTRODUCTION

SCOPE

The rules and requirements provided in the ASME Section XI Code pertain to the implementation of Inservice Inspection and In-Service testing of components in a nuclear plant. At the Oyster Creek Nuclear Generating Station operated by GPU Nuclear Corporation the In-Service Inspections, In-Service Testings of pumps and valves, the functional testing of snubbers and repairs and replacements are administrated by separate GPUN organizations. This document shall only address the update to the In-Service Inspection Program.

Inservice Inspection is the program of planned methods and actions utilizing the process of visual, surface or volumetric examination, for assuring the structural, and pressure-retaining integrity of safety related components in accordance with the rules of codes and standards. The implementation of an Inservice Inspection Program is performed during the service life of a nuclear power plant expressly to detect failures, defects or discontinuities in pressure-retaining components and their supports.

This document presents the Inservice Inspection plan that shall be implemented at the Oyster Creek Nuclear Generating Station during its third ten year inspection interval. The plan was prepared in accordance with the 1986 edition of the ASME Boiler and Pressure Vessel Code, Section XI, without addenda, except for relief requested under the provisions of the Code of Federal Regulation, Title 10, part 50.55a(g)(5)(iii). Pursuant to NRC Regulatory Guide 1.26, Systems and portions of systems are categorized with respect to quality groups and are presented in this document as classes 1, 2 and 3. The boundary breaks between quality groups were primarily determined by the system's Nuclear Safety Related function, a classification based on design criteria.

For this program, augmented inspection is the term applied to all examinations or testing operations performed which exceed the specific requirements defined in the section XI code. Augmented inservice inspection programs may be required by the NRC or be implemented voluntarily by GPUN in the interest of increased plant operational safety and reliability. Augmented inspection programs are addressed only if their scope is mutual with Section XI boundaries.

OBJECTIVES

The purpose of this document is to convey the basis that was applied in determining system and component inspection classifications, assignment of examination methods, scheduling inspections, and to provide GPUN's position on the Code and regulatory requirements pertaining to the rules governing inservice inspection.

Moreover, it shall provide a comprehensive plan that shall provide a reference and a means for making assessments of GPUN's compliance with the Code and implementation of the ISI Program during the third ten year inspection interval.

ORGANIZATION

The Inspection Plan consists of seven chapters; the first three chapters establish the basis of the Inspection Plan and the remaining four outlines the plan for implementing the Section XI inspection requirements.

Chapter 1 contains the general information about the program description. It provides a description of Oyster Creek, a background of the ISI program, the updated program objectives, references to augmented inspection programs that

focus upon Section XI components, and a list of documents that were used for guidance. The appendix contains the approved Code Cases GPUN has chosen to invoke and relief requests for code requirements GPUN has deemed to be impractical at Oyster Creek.

Chapter 2 contains the Code exemptions that shall be applied to this inspection plan and GPUN's position on interpretations of Section XI code requirements.

Chapter 3 contains the descriptions of ISI Boundary Classifications for Inspection Classes 1, 2 and 3. In the Appendix are the system descriptions for systems within the ISI boundary and the ISI boundary drawings.

Chapters 4, 5, 6 and 7 defines GPUN's commitments for performing visual, surface or volumetric examinations in accordance with Section XI requirements IWB-2000, IWC-2000, IWD-2000 and IWF-2000 respectively. A tally of valves, pumps, supports and welds in piping and other components that are required to be examined is presented. For the applicable Section XI examination category - item number, the inspection requirements and the frequency that these inspections shall be performed to are prepared on a specification form. The scheduled examinations shall primarily occur during refueling outages; however, adjustments to the schedule may possibly occur as a result of outage planning and coordinating efforts. The quantity of examination scheduled in this plan is GPUN's attempt to satisfy the Section XI requirements within the limits of the minimum and maximum allowed examination permitted during a 40 month period. Oyster Creek's refueling outage cycles presently coincides with Section XI periods as follows; refueling outages 14R and 15R are within the first period, 16R is within the second period and outages 17R and 18R are within the third and final period of the interval. However, unforseen changes in operational cycle events may alter this original schedule.

OYSTER CREEK NUCLEAR GENERATING STATION

INSERVICE INSPECTION PROGRAM UPDATE

TO THE

ASME BOILER AND PRESSURE VESSEL CODE,

SECTION XI 1986 EDITION WITHOUT ADDENDA

FEBRUARY 1992

CHAPTER 1
PROGRAM DESCRIPTION

1.1 Plant Description

The Oyster Creek Nuclear Generating Station is a single cycle, forced circulation, boiling light-water reactor and electrical generation facility, located in Lacey Township, of Ocean County, New Jersey. The owner is Jersey Central Power & Light Company and its operator is GPU Nuclear Corporation.

The Nuclear Steam Supply System (NSSS) supplier was the General Electric Company, the Architect-Engineer was Burns & Roe, Inc., and the constructors were Burns & Roe, Inc. and J. A. Jones Construction Co.

The reactor design is a General Electric (GE) BWR/2 and the containment is a Mark I.

The facility is operated under NRC Operating License No. DPR-16. The Plant's rated output is 1930 MWt licensed thermal power and 650 MWe net design electrical rating.

1.2 Background

The construction permit for the Oyster Creek Nuclear Generating Station was issued on December 15, 1964. The Reactor Primary System (i.e. Reactor Vessel, Reactor Recirculating Piping, Isolation Condenser and all piping, pumps and valves up to the first isolation valve with the exception of the Feedwater System where the break is at the second isolation valve) was fabricated, inspected and tested in accordance with the ASME Boiler and Pressure Vessel Code, Section I, Power Boilers, 1962 Edition and addenda plus the Nuclear Code Cases applicable on December 11, 1963. The vessel purchase specification dated January 22, 1964 further directed the use of Section VIII - Unfired Pressure Vessels where Section I did not cover specific details. The piping outboard of the first isolation valves was fabricated, inspected and tested in accordance with the code for pressure piping ASA B31.1 1955 edition.

The Oyster Creek plant was designed and constructed before Inservice Inspection rules had been developed and before Section XI came into existence. Some areas of the plant, therefore, were designed and constructed with very restricted accessibility with regard to structural steel and concrete members surrounding components which precludes the performance of some Inservice examinations to the extent required by the present code.

Commercial operation of the Oyster Creek plant began on December 8, 1969, under Facility License No. DPR-16 which was issued to Jersey Central Power & Light Company by the Atomic Energy Commission (AEC). The original inservice inspection program for the plant was defined in Table 4.3.1, "Examination schedule of actor Coolant System", in Section 4 of the Technical Specification for the plant. The program was then enhanced with change request No. 28 (Revisions 1, 2, 3 & 4) and finally amended by Amendment No. 34, which was approved to incorporate additional inspection requirements. The requirements of Table 4.3.1 did not reference any codes or standards as obligatory requirements. Change request No. 28, however, did represent the guidelines used for Inservice Inspection at Oyster Creek during the last 5 years of the first ten year inspection interval. This program paralleled, to the maximum extent practical, the requirements set forth in the 1971 edition of Section XI through the Summer 1973 Addenda.

As required by 10CFR50.55a(g), the Inservice Inspection program for the second ten-year interval was updated. The effective edition of the Code with regard to the second ten year interval was the 1974 edition through

the Summer 1975 addenda. The start date for the second ten year interval was December 8, 1979.

The Oyster Creek Nuclear Generating Station underwent a major refueling and maintenance outage of twenty-two months during 1983 and 1984. In GPUN's letter dated May 20, 1988, GPU Nuclear requested a change to the ending date for the second ten year inservice inspection interval. Subsection IWA-2400, "Inspection Intervals", of Section XI of the ASME Code, 1974 Edition, through the Summer 1975 addenda states that "for plants that are out of service continuously for one year or more, an inspection interval may be extended for an equivalvent period." The NRC staff evaluated the request and in letter dated March 6, 1989, the NRC staff concluded that the Oyster Creek Nuclear Generating Station's second ten year inservice inspection interval may be extended twenty-two months to end on October 14, 1991.

During the final refueling outage 13R, certain pressure tests were not completed. For this reason, it was necessary for GPUN to take an extension in order to satisfy the interval requirements. The necessary extension was five months which ends the second interval on March 14, 1992.

As required by 10CFR50.55a(g), GPU Nuclear Corporation has performed a review of the Inservice Inspection Program requirements for the Oyster Creek plant and under the provisions of 10CFR50.55a, inservice inspection will be performed in accordance with the requirements of ASME Section XI, 1986 edition to commence on March 15, 1992. Figure 1-1 summarizes the O.C. Inservice Inspection compliance for the first, second and third interval.

FIGURE 1-1
OYSTER CREEK'S INSERVICE INSPECTION COMPLIANCE

TEN-YEAR INTERVAL	INSERVICE INSPECTION GUIDELINES	YEARS
FIRST (1-5)	OYSTER CREEK TECHNICAL SPECIFICATION	1969 - 1974
(6-10)	SECT. XI 1971 EDITION THRU SUMMER 1973 ADDENDUM	1975 - 1979
SECOND	SECT. XI 1974 EDITION THRU SUMMER 1975 ADDENDUM	1979 - 1992
THIRD	SECT. XI 1986 EDITION	1992 - 2002

1.3 Requirements for Inservice Inspection Program Updates

Paragraph 50.55a(g)(1)(ii) of 10CFR50 requires that Inservice Inspections be conducted in successive 120 months intervals throughout the service life of the facility, and that the examination programs shall comply with the requirements in editions and addenda of the ASME Section XI code in effect no more than 12 months prior to the start of each 120-month interval. This inservice inspection program update, prepared for the Oyster Creek plant defines the Inservice Inspection requirements for the third ten-year 120-month interval beginning on October 15, 1991. The ASME Section XI 1986 edition with no addenda is the latest approved edition and shall be the Code of record for examination, pressure test, repair and replacement requirements.

1.4 Augmented Inspections

Paragraph 50.55a(g)(6)(ii) of 10CFR50 states that the commission may require the licensee to follow an augmented Inservice Inspection program when it deems that additional assurance of structural reliability is necessary. This update defines "Augmented Inspection" as the term applied to all examinations or testing performed which exceeds the specific requirements defined in ASME Section XI. Augmented inservice inspections shall be performed when specific directives are issued by regulatory authorities and/or implemented voluntarily by GPU Nuclear in the interest of increased plant operational safety and reliability. This ISI update references the regulatory required inspection programs that fall within the scope of ASME Section XI components.

1.5 Program Basis Documents

1.5.1 Licensing Documents

1.5.1.1 Technical Specification

The Technical Specification, Section 4.3.B for Oyster Creek Nuclear Generating Station states that "Inservice Inspection of ASME Code Class 1, Class 2, and Class 3 systems and components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR, Section 50.55a(g), except where specific written relief has been granted by the NRC pursuant to 10CFR, Section 50.55a(g)(6)(c)."

This Inservice Inspection Program update doesn't create a conflict with the Technical Specification where the requirements of the ASME codes would make it necessary to amend the Technical Specifications in order to bring it into compliance with 10CFR50.55a.

1.5.1.2 Operational Quality Assurance Plan

The Operational Quality Assurance Plan describes the formal and comprehensive plan to ensure compliance with 10CFR50, Appendix B and describes the administrative organizations.

1.5.1.3 Updated Final Safety Analysis Report

The Oyster Creek Nuclear Generating Station's Updated Final Safety Analysis Report defines the design bases and system descriptions and was used in accordance with the regulatory rules and guidelines for determining Inservice Inspection system boundaries. The FSAR was used as the basis for characterizing the ISI system description as it refers to those systems which are required to: (1) permit the safe and orderly shutdown of the reactor, (2) mitigate the consequences of an accident, or (3) limit the radiation dose at the plant site boundary.

1.5.2 Regulatory Documents

1.5.2.1 10CFR50 for ISI Quality Group Classification, Group A and for Codes and Standards.

1.5.2.2 Regulatory Guide 1.26 for ISI Quality Group Classification Groups B, C, and D.

1.5.2.3 Regulatory Guide 1.147 for those ASME Code Cases that are generally acceptable to the NRC for implementation in the ISI program.

1.5.2.4 Regulatory Guide 1.150 for guidance in the performance of ultrasonic examination of the Reactor Vessel welds during preservice and inservice examinations.

1.5.2.5 NUREG-0822 for noting those exceptions to 10CFR50, Appendix A and to assure the ISI program continues to comply with refined engineering safeguard evaluations.

1.5.2.6 NUREG-0313 for augmented examination of stainless steel welds which were susceptible to Intergranular Stress Corrosion Cracking.

1.5.2.7 NUREG-0619 for augmented examinations of Feedwater Nozzles and Control Rod Drive Return Nozzle determined to be susceptible to thermal fatigue cracking.

1.5.3 Codes and Standards

1.5.3.1 ASME Section I 1965 edition the original design and construction code for Reactor Vessel and connecting piping out to the first isolation valve, to the second isolation valve on the Feedwater system and all of the Isolation Condenser system.

1.5.3.2 ASA B31.1 1955 edition original design and construction code for piping outboard of the Reactor Vessel past the first isolation valve and past the second isolation valve for the feedwater system.

1.5.3.3 ASME Section III for repairs, replacements and modifications of components and/or systems classified as Nuclear Safety related if the original Code cannot be used.

1.5.3.4 ASME Section XI 1986 edition no addenda Effective edition and applicable addenda approved by the NRC twelve months prior to the start of the third inspection interval. This update is for the implementation of rules delineated in Section XI Division 1, Subsections IWA, IWB, IWC, IWD and IWF, and mandatory appendices.

[illegible] The Code Cases for Inservice Inspection ASME Section XI Division 1 that GPUN intends to adopt are listed in Appendix 1-1 of this submittal.

1.5.4 Code Relief 10CFR50.55a(5) has provisions for the licensee (GPUN) to obtain relief from the Code-required performance of certain examinations and tests that the licensee (GPUN) deems impractical. To apply for such relief, the licensee (GPUN) must notify the NRC and submit information and justification to support the determination that conformance with the Code requirements is impractical. This update submits relief request in Appendix 1-2.

APPENDIX 1A

OYSTER CREEK ISI PROGRAM

APPLICABLE ASME CODE CASES

APPENDIX 1A
OYSTER CREEK ISI PROGRAM
APPLICABLE ASME CODE CASES

CODE CASE NO.	TITLE
N-355[1]	Calibration Block for angle beam Ultrasonic Examination of Large Fittings in accordance with Appendix III - 3410 Section XI, Division 1.
N-416	Alternative Rules for Hydrostatic Testing of Repairs or Replacement of Class 2 Piping Section XI, Division 1.
N-436-1	Alternative methods for evaluation of flaws in Austenitic piping Section XI, Division 1.
N-445	Use of later editions of SNT-TC-1A for Qualification of Nondestructive Examination Personnel Section XI, Division 1, 2, and 3.
N-446	Re-certification of visual examination personnel section XI, Division 1.
N-448	Qualification of VT-2 and VT-3 Visual Examination Personnel Section XI, Division 1.
N-457	Qualification specimen notch location for Ultrasonic Examination of Bolts and Studs Section XI, Division 1.
N-460	Alternative Examination coverage for Class 1 and Class 2 welds section XI, Division 1.
N-461	Alternative rules for piping calibration block thickness Section XI, Division 1.

NOTE (1): This code case is applicable up to the 1983 Edition of Section XI only. GPUN is using this Code Case for the 1986 code because the application it addresses was not included into code requirements until the 1986 addenda.

APPENDIX 1B

OYSTER CREEK ISI PROGRAM

RELIEF REQUESTS

APPENDIX 1B

OYSTER CREEK ISI PROGRAM

RELIEF REQUESTS

RELIEF REQUEST NO.	SUBJECT
R1	CATEGORY B-A, ITEM NOS. B1.21 & B1.22. INACCESSIBLE WELDS ON VESSEL BOTTOM HEAD.
R2	CATEGORY B-J, ITEM NOS. B9.10, B9.20 AND B9.40. INACCESSIBLE WELDS IN CONTAINMENT PENETRATIONS.
R3	CATEGORY B-L-2, ITEM NO. B12.20. DISASSEMBLY OF REACTOR RECIRCULATION PUMP.
R4	CATEGORY B-M-2, ITEM NO. B12.50. DISASSEMBLY OF CLASS 1 VALVES.
R5	IWB-2430 & IWC-2430. CRITERIA FOR ADDITIONAL EXAMINATIONS.
R6	IWF-2510. SELECTION CRITERIA FOR EXAMINATION OF COMPONENT SUPPORTS.
R7	IWA-1320, REGULATORY GUIDE 1.26 C.b.(2) SHUTDOWN COOLING SYSTEM
R8	CATEGORY B-M-1, ITEM NO. B12.30 EMRVS
R9	CATEGORY B-J, ITEM NO. B9.11 AND B9.12 CREDIT FOR IGSCC OF WELD OVERLAY REPAIRS
R10	REPAIRS AND REPLACEMENTS

RELIEF REQUEST R1

CODE REFERENCE:

Reactor Vessel Pressure Retaining Welds, Category B-A, Item Numbers B1.21 and B1.22.

CODE REQUIREMENT:

The Volumetric examinations performed during each inspection interval of the accessible length of one weld and shall cover essentially 100% of the weld length.

CODE RELIEF REQUEST:

Relief is requested from the Code required volumetric examinations of all meridional and circumferential welds in the lower head.

PROPOSED ALTERNATIVE EXAMINATION:

Visual examination of all lower head welds during pressure testing each refueling outage will be performed.

BASIS:

The lower head welds are inaccessible to examination from the vessel exterior because of interferences with the biological shield walls, the support skirt and the Control Rod Drive housings and instrumentation entering the bottom head.

Thus, Code requirements are impractical because of existing plant design and reactor vessel configuration.

RELIEF REQUEST R2

CODE REFERENCE:

Pressure Retaining Welds in Piping Category B-J, Item Numbers B9.10, B9.20 and B9.40.

CODE REQUIREMENT:

The volumetric and/or surface examinations performed during each inspection interval shall cover all of the area of 25% of the circumferential joints including the adjoining sections of longitudinal joints of at least a pipe diameter and 25% of the socket weld joints.

CODE RELIEF REQUEST:

Relief is requested from the Code required examination of pipe welds in the following 11 containment penetrations.

(a) X-6, Liquid Poison
(b) X-12B, X-70, Core Spray
(c) X-2A, X-2B, X-72, Main Steam
(d) X-7, X-8, Shutdown Cooling
(e) X-4A, X-4B, Feedwater
(f) X-61, Control Rod Drive Return

PROPOSED ALTERNATIVE EXAMINATION:

Visual examinations of the areas of these penetrations will be made during pressure testing each refueling outage.

BASIS:

Each process pipe has a weld inside the penetration assembly that is inaccessible for examination by either surface or volumetric methods. The initial design of the assemblies did not provide for accessibility for inservice examinations. The welds can only be examined by inspecting for evidence of leakage during system pressure testing. The areas of these penetrations are monitored by temperature and radiation monitors that will detect leaks in these lines.

RELIEF REQUEST R3

CODE REFERENCE:

Pump Casings Category, B-L-2 Item Number, B12.20.

CODE REQUIREMENT:

The visual examination of the pump casing interior surface on one of the five reactor recirculation pumps by the end of the inspection interval.

CODE RELIEF REQUEST:

Relief is requested from the Code requirement to disassemble at least one pump during the interval only for the purpose of performing a visual examination in accordance with Section XI.

PROPOSED ALTERNATIVE EXAMINATION:

Visual examination of the casing interior surface of reactor recirculation pump shall be performed only if the pump is disassembled for repairs or maintenance.

BASIS:

The Oyster Creek Byron Jackson recirculaton pumps have no casing welds. The 1989 edition of Section XI, although not approved by the NRC at this time, changed this examination to be required only if the pump is disassembled for maintenance, repair or volumetric examination.

GPUN has reviewed the radiation exposure records for D Recirculation Pump Repair; performed in 1989. The records showed that the personnel exposure amounted to 42 Rem. This was a major evolution. The expense in man-hours, materials and personnel exposure is only justified for corrective maintenance. Estimates from 1989 data shows the personnel exposure shall amount to 15 Rem minimum if required to prepare the pump solely for the purpose to perform a visual examination.

Based on the pumps' operation histories and vendor recommendation, we are able to conclude that the cost in material, risk to personnel safety and man-rem exposure far exceeds the benefits of achieving the indistinct assurance of structural integrity.

Relief Request R4

CODE REFERENCE:

Valve bodies exceeding 4 inch NPS, Category B-M-2 Item Number B12.50.

CODE REQUIREMENT:

The visual examination of the valve body interior surface on at least one valve within each group of valves that are of the same size, constructional design and manufacturing method, and that perform similar functions in the system, shall be performed by the end of the interval. The requirement pertains to 18 valves in Oyster Creek's Class 1 System Boundaries.

CODE RELIEF REQUEST:

Relief is requested from the Code requirement to disassemble the valves during the interval only for the purpose of performing a visual examination in accordance with Section XI.

PROPOSED ALTERNATIVE EXAMINATION:

Perform the Section XI required visual examinations VT-3 Category B-M-2 on non-welded valves only if the valves are disassembled for repairs or maintenance.

BASIS:

For the 70 valve bodies (see attached list) in the Isolation Condenser, Core Spray, Shutdown Cooling, Reactor Recirculation, Feedwater, Clean-up Demineralizer and Main Steam systems, relief is requested from disassembly of an operable valve for the performance of an Inservice visual examination (VT-3).

The requirement to disassemble an operable valve for the sole purpose of performing a visual examination (VT-3) of the internal pressure retaining boundary is impractical and not commensurate with the increased safety achieved by this inspection. To disassemble these items would provide a very small potential for increasing plant safety margins with a disproportionate impact on expenditures of plant manpower and man-rem exposure. For valves outside of the Reactor Recirc. system, records from our radiation exposure histories shows an average of 2 Rem per valve for the work associated with the valves' disassemblies/re-assemblies. Disassembly of valves in the Reactor Recirc. system would require a full core offload and the exposure would be significantly higher.

The 1989 edition of Section XI, although not approved by the NRC at this time, allows for this examination to be scheduled only if the valves are disassembled for maintenance, repair or volumetric examination.

RELIEF REQUEST R4
ATTACHMENT

CATEGORY B-M-2
CLASS 1 VALVE BODY LIST

SYSTEM: ISOLATION CONDENSER					
COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-14-30	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-31	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-32	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-33	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-34	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-35	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-36	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-14-37	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION

SYSTEM: CORE SPRAY					
COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-20-15	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-20-17	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-20-21	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-20-23	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-20-40	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-20-41	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-20-150	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION
V-20-151	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION
V-20-152	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION
V-20-153	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION

RELIEF REQUEST R4
ATTACHMENT

CATEGORY B-M-2
CLASS 1 VALVE BODY LIST

SYSTEM: SHUTDOWN COOLING

COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-17-55	8"	GLOBE	ANCHOR-DARLING	CAST	FLOW CTL
V-17-56	8"	GLOBE	ANCHOR-DARLING	CAST	FLOW CTL
V-17-57	8"	GLOBE	ANCHOR-DARLING	CAST	FLOW CTL
V-17-205	8"	GLOBE	ANCHOR-DARLING	CAST	ISOLATION
V-17-206	8"	GLOBE	ANCHOR-DARLING	FORGE	ISOLATION
V-17-207	8"	GLOBE	VELAN	CAST	ISOLATION
V-17-1	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-17-2	10"	GATE	ANCHOR-DARLING	FORGE	ISOLATION
V-17-3	10"	GATE	VELAN	FORGE	ISOLATION
V-17-19	14"	GATE	VELAN	FORGE	ISOLATION
V-17-54	14"	GATE	VELAN	FORGE	ISOLATION

SYSTEM: RECIRCULATION

COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-37-9	26"	GATE	CRANE	CAST	ISOLATION
V-37-10	26"	GATE	CRANE	CAST	ISOLATION
V-37-20	26"	GATE	CRANE	CAST	ISOLATION
V-37-21	26"	GATE	CRANE	CAST	ISOLATION
V-37-31	26"	GATE	CRANE	CAST	ISOLATION
V-37-32	26"	GATE	CRANE	CAST	ISOLATION
V-37-42	26"	GATE	CRANE	CAST	ISOLATION
V-37-43	26"	GATE	CRANE	CAST	ISOLATION
V-37-53	26"	GATE	CRANE	CAST	ISOLATION
V-37-54	26"	GATE	CRANE	CAST	ISOLATION

SYSTEM: FEEDWATER

COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-2-35	18"	GATE	CRANE	CAST	ISOLATION
V-2-36	18"	GATE	CRANE	CAST	ISOLATION
V-2-71	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW
V-2-72	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW
V-2-73	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW
V-2-74	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW

RELIEF REQUEST R4
ATTACHMENT

CATEGORY B-M-2
CLASS 1 VALVE BODY LIST

SYSTEM: CLEAN-UP DEMINERALIZER

COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-16-1	6"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-16-2	6"	GATE	HIRATA	CAST	ISOLATION
V-16-14	6"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-16-61	6"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-16-63	6"	GATE	ANCHOR-DARLING	CAST	ISOLATION
V-16-133	6"	GATE	VELAN	FORGE	ISOLATION
V-16-62	6"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW

SYSTEM: MAIN STEAM

COMP. NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
V-1-7	24"	GLOBE	ATWOOD-MORRILL	CAST	ISOLATION
V-1-8	24"	GLOBE	ATWOOD-MORRILL	CAST	ISOLATION
V-1-9	24"	GLOBE	ATWOOD-MORRILL	CAST	ISOLATION
V-1-10	24"	GLOBE	ATWOOD-MORRILL	CAST	ISOLATION
V-1-160	6"	RELIEF	CONSOLIDATED	CAST	P P
V-1-161	6"	RELIEF	CONSOLIDATED	CAST	R R
V-1-162	6"	RELIEF	CONSOLIDATED	CAST	O E O
V-1-163	6"	RELIEF	CONSOLIDATED	CAST	V S T
V-1-164	6"	RELIEF	CONSOLIDATED	CAST	E S E
V-1-165	6"	RELIEF	CONSOLIDATED	CAST	R U C
V-1-166	6"	RELIEF	CONSOLIDATED	CAST	R T
V-1-167	6"	RELIEF	CONSOLIDATED	CAST	E I
V-1-168	6"	RELIEF	CONSOLIDATED	CAST	O N

RELIEF REQUEST R5

CODE REFERENCE:

Additional Examinations IWB-2430 and IWC-2430.

CODE REQUIREMENT:

Additional examinations shall be performed in accordance with IWB-2430 (a), (b), and (c) and IWC-2430 (a), (b) (c) and (d).

CODE RELIEF REQUEST:

Relief is requested from the code requirement IWB-2430 (a), (b) and (c), and IWC-2430 (a), (b), (c) and (d).

PROPOSED ALTERNATIVE COMPLIANCE:

GPUN shall perform additional examinations for IWB, IWC and IWD Category components as follows:

I. ALTERNATIVE TO IWB-2430 - ADDITIONAL EXAMINATIONS

(a) Examinations performed in accordance with Table IWB-2500-1, except for examination categories B-E and B-P, that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1 shall be extended to include additional examinations at this outage. The additional examinations shall include an additional number of welds, areas, or parts[1] included in the inspection item[2] equal in number to the welds, areas, or parts included in the inspection item that were scheduled to be performed during the present inspection period. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require the inclusion of piping system other that the one containing the flaws or relevant conditions.

(b) If the additional examinations required by (a) above reveal flaws or relevant conditions exceeding the acceptance standards of Table IWB-3410-1, the examinations shall be further extended to include additional examinations at this outage. These additional examinations shall include the remaining number of welds, areas, or parts, included in the inspection item of similar material and service subject to the same type of flaws or relevant conditions.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations shall be performed as normally scheduled in accordance with IWB-2400.

II. Alternative to IWC-2430 Additional Examinations

(a) Examinations performed in accordance with Table IWC-2500-1, except for examination category C-H, that reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1 shall be extended to include additional examinations at this outage.[3] The additional examinations shall include an additional number of welds, areas, or parts included in the inspection item equal in number to 20% of the welds, areas, or parts included in the

inspection item that are scheduled to be performed during the interval. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require the inclusion of piping systems other than the one containing the flaw or relevant condition.

(b) If the additional examinations required by (a) above reveal flaws or relevant conditions exceeding the acceptance standards of Table IWC-3410-1, the examinations shall be further extended to include additional examinations at this outage. These additional examinations shall include the remaining number of welds, areas, or parts included in the inspection item of similar material and service subject to the same type of flaws or relevant conditions.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations shall be performed as normally scheduled in accordance with IWC-2400.

III.ADDITIONAL EXAMINATIONS FOR CLASS 3 COMPONENTS - IWD-2430)

(a) Examinations performed in accordance with Table IWD-2500-1 (except for examination item numbers D1.10, D2.10 and D3.10) that reveal flaws or relevant conditions exceeding the acceptance standards of IWD-3000 shall be extended to include additional examinations at this outage. The additional examinations shall include an additional number of welds, areas, or parts included in the inspection item equal in number to 20% of the welds, areas, or parts included in the inspection item that are scheduled to be performed during the interval. The additional examinations shall be selected from welds, areas, or parts of similar material and service. This additional selection may require the inclusion of piping systems other than the one containing the flaw or relevant condition.

(b) If the additional examinations required by (a) above reveal flaws or relevant conditions exceeding the acceptance standards of IWD-3000, the examinations shall be further extended to include additional examinations at this outage. The extent of the additional examinations shall be determined by the Owner based upon an engineering evaluation of the root cause of the flaws or relevant conditions. The Owner's corrective measures shall be documented per IWA-6000.

(c) For the inspection period following the period in which the examinations of (a) or (b) above were completed, the examinations shall be performed as normally scheduled in accordance with IWD-2400.

BASIS:

The requirements in the 1986 Code are very prescriptive and could actually not allow credit for examination of components which should be examined as part of an expanded sample. ASME had recognized that these situations can exist and is in the process of changing the Code additional examination requirements. These changes allow selection of additional examinations based on similar materials and service, thus the root cause of the condition requiring additional examinations is considered when expanding examination samples.

[1] Welds, areas, or parts are those described or intended in a particular inspection item of Table IWB-2500-1.

[2] An inspection item, as listed in Table IWB-2500-1, may comprise a number of welds, areas, or parts of a component required to be examined in accordance with the inspection plan and schedule (IWA-2420).

[3]GPUN performs examinations on certain systems or portions of systems during plant operation to keep personnel radiation exposure as low as reasonably achievable (ALARA) and minimize ISI impact to a scheduled outage. GPUN will evaluate the flaw or relevant condition for impact on continued safe plant operation when the flaw or relevant condition is identified. All additional examinations required will be completed prior to restart from the subsequent refueling outage.

Relief Request R6

CODE REFERENC

Component Supports IWF-2510 - Supports selected for examination.

CODE REQUIREMENT:

IWF-2500 - Component supports subject to examination shall be examined in accordance with Table IWF-2500-1.

CODE RELIEF REQUEST:

Relief is requested from the Code requirement of categorizing the supports in accordance with the categories and item numbers in Table IWF-2500-1, and from performing visual examination of 100% of the non-exempt piping supports.

PROPOSED ALTERNATIVE EXAMINATION:

GPUN proposes to use IWF-2000 of the 1989 edition with the 1990 Addenda in lieu of IWF-2000 of the 1986 edition of Section XI.

BASIS:

Table IWF-2500-1 of Section XI requires examination of 100% of the non-exempt piping supports and at least one component support where similar components exist during each inservice inspection interval. The ASME recognized that component support integrity could be verified adequately by examining a percentage of the support population. This approach was issued in the 1990 Addenda to Section XI. Significant manpower would be necessary to support scaffold erection and insulation removal as well as actual performance of the examinations. The sampling of supports in accordance with the 1990 Addenda would greatly reduce the manpower required to perform these examinations. Occupational exposures involving Class 1, 2, and 3 piping systems could be reduced by as much as 75%, 85% and 90% respectively. Additional assurance of system integrity is provided through the system pressure tests required by Section XI.

Relief Request R7

CODE REFERENCE:

Classification IWA-1320 ASME Section XI and Regulatory Guide 1.26, C.b.(2), Residual Heat Removal.

CODE REQUIREMENT:

"The Group B quality standards given in Table 1 of Regulatory Guide 1.26 should be applied to water and steam-containing pressure vessels, heat exchangers (other than turbines and condensers), storage tanks, piping, pumps and valves that are either part of the reactor coolant pressure boundary...or not part of the reactor coolant pressure boundary but part of systems or portions of systems important to safety that are designed for residual heat removal.

CODE RELIEF REQUEST:

To exclude a portion of the Shutdown Cooling System (RHR), on the secondary side from valves V-17-1, 2, 3, 55, 56 and 57, from the rules of Section XI, IWC 2000 for volumetric and surface examinations.

PROPOSED ALTERNATIVE EXAMINATIONS:

GPUN proposes to perform visual examinations (VT-2) each refueling outage. The frequency already established and committed to in the plant's "Technical Specification", Section 6.15.

BASIS:

The Shutdown Cooling System is Class 1 from valves V-17-1, -2, -3, -55, -56 and -57 to the Recirc. Loops. This is because that portion of the System is within the Reactor Coolant Pressure Boundary (RCPB). Other portions of the Shutdown Cooling System are not within the ISI boundary, and, further, are not Nuclear Safety Related (NSR). This is to justify the reason for augmented ISI for the portions of the Shutdwon Cooling System outside of the Class 1 piping within the ISI boundary.

The active function for the Shutdown Cooling System (SDC) is to remove decay heat during the second phase of cooldown from Reactor pressure below 150 psig and temperature below 350°F to Reactor temperature of 125°F. SDC is designed to maintain 125°F by removing fission product decay heat. Per Regulatory Guide 1.26 SDC, outside of RCPB, would be Quality Group B, which is analogous to ASME Code Class 2.

Per original design and the GPUN's FSAR (Section 5.4.7.3), SDC is not NSR. Items classified as 1, 2 or 3 are required to meet the requirements of ASME Section XI. There is, however, an exception. Systems that are not nuclear safety class and that an Owner optionally classified as 2 or 3 need not meet the requirements of Section XI, as per IWA 1320(e).

Relief Request R8

CODE REFERENCE:

Pressure retaining welds in valve bodies, category B-M-1, item number B12.30.

CODE REQUIREMENT:

A volumetric examination shall be performed on pressure retaining welds on valve bodies that are of NPS 4" and greater. The volume of coverage shall include 100% of the weld's length, and thickness and a width extending in both directions for 1/2" beyond the toes of the weld measured on the OD surface.

The Code requires an examination to be performed from two sides of the weld, where practicable, or from one side of the weld, as a minimum. Section XI, III-4450 "INACCESSIBLE WELDS" states "welds that cannot be examined from at least one side (edge) using the angle beam technique shall be examined by another volumetric method".

CODE RELIEF REQUEST:

Relief is requested from the code volumetric examination for the five Electromagnetic Relief Valves (EMRVs). The valves are 6" nominal diameter and would require a volumetric examination on two welds per valve.

PROPOSED ALTERNATIVE EXAMINATION:

Perform a surface examination on both OD and ID surfaces for at least five valves during the interval.

BASIS:

The manufacturer's weld that the Code examination is required to be performed on is a flange to valve body weld. Because the valves are small, this configuration restricts the performance of an ultrasonic examination. Full coverage cannot be achieved from two sides or from one side. In lieu of the alternate volumetric examination, GPUN requests to perform surface examinations from the I.D.

The EMRVs are in a preventive maintenance program that requires all five valves be tested and refurbished every 48 months based on operating cycles of 24 months. By United States Nuclear Regulatory Commission letter dated September 12, 1990, Subject: Oyster Creek Nuclear Generating Station - NUREG-0737, Item II.K.3.16 the NRC staff found GPUN's maintenance program frequency to be acceptable.

The ISI program for category B-M-1 shall be concurrent with the maintenance program and all five valves shall be inspected at least once during the interval.

Relief Request R9

CODE REFERENCE:

Pressure retaining welds in piping category B-J, Item numbers B9.11 and B9.12 and Figure IWB-2500-8.

CODE REQUIREMENT:

Piping having a nominal diameter of 4 inches and greater requires a volumetric examination. The area of interest shall be in accordance with Figure IWB-2500-8, exam volume C-D-E-F.

CODE RELIEF REQUEST:

Relief is requested from the Code required area of interest, Figure IWB-2500-8, exam volume C-D-E-F for the examination of Weld Overlay Repairs.

PROPOSED ALTERNATIVE EXAMINATION:

GPUN shall perform IGSCC examinations in accordance with Nuclear Regulatory Commission's Generic Letter 88-01 on Weld Overlay Repairs where the area of interest is the full structural weld overlay and the upper 25% of the original base metal.

BASIS:

The existing standard overlay repair joints are included in the category B-J population, and due to this design it is impractical to perform the Code-required examination where the area of interest is the bottom 1/3T of the original base metal because none of the original weld or heat affected zone is considered in the analysis of the required wall thickness (T). The standard overlays are designed to provide the nominal margin of 2.77 against limit load failure and meets the requirements for nominal wall thickness. These joints are scheduled for examination in accordance with NRC Generic Letter 88-01, for which the area of interest is the overlay weld and the upper 25% of the original base metal. GPUN considers using the results of the IGSCC examinations of Weld Overlay Repairs as a valid examination for satisfying our ISI requirement. GPUN recognizes that a consolidation of ISI and IGSCC exam requirements shall net a positive decrease in the amount of effort it takes to support the two separately, which means less man-hours towards the support and preparation of exams, less equipment and material utilization, less radwaste generated and a savings in ALARA for support and inspection personnel.

Relief Request R10

CODE REFERENCE:

1. Repairs to pressure retaining components and their supports including appurtenances and subassemblies or part of a component and core support structure; IWA-4700.
2. Replacements of spares and renewal components, appurtenances, and subassemblies or parts of a component or system; IWA-7131(g) and IWA-7500.
3. Requirements for Owner's Responsibility, Summary Report preparation and submittal; IWA-6210(b), IWA-6220(c) and IWA-6230.

CODE REQUIREMENTS:

The Code requires the preparation and submittal of summary reports for all repairs and replacements performed in accordance with Articles IWA-4000 and IWA-7000.

CODE RELIEF REQUEST:

Relief is requested from the Code requirement to prepare and submit an NIS-2 report for components and their supports including appurtenances and subassemblies; (1) for repairs made by welding on non-pressure retaining items, (2) for repairs made by means other than welding on pressure retaining components, attachments to pressure retaining components and non-pressure retaining components, (3) for replacements made by welding on non-pressure retaining components, and (4) for replacements made by means other than welding on attachments to pressure retaining components and non-pressure retaining components. See Attachment.

PROPOSED ALTERNATIVE:

GPUN shall prepare and submit an NIS-2 report for: (1) welded repairs and/or replacements that become part of the pressure retaining boundary or attached to the pressure retaining boundary, (2) non-welded replacements that becomes part of the pressure retaining boundary due to service induced failures only. The preparation and submittal of the NIS-2 report shall be for components greater than 1 inch for category IWB and components greater than 4 inches for categories IWC, IWD and IWF.

BASIS:

The requirements of IWA-4700 and IWA-7400 for repairs and replacements is not consistent with preservice and inservice requirements delineated in IWX-2200 and IWX-2500 respectively. In recognizing this inconsistency, GPUN understands that the ISI record keeping shall increase significantly whereby creating the need for more paperwork a direct contradiction to our efforts to produce less paper.

Since GPUN has installed its maintenance tracking system, GMS-2 the need for hardcopy documents has steadily declined. The GMS-2 system manages all maintenance activities electronically. All forms of maintenance work, including repairs and replacements, are tracked from the initiation of the work request, when the scope and purpose is defined, through the planning, ordering of equipment and materials to job completion and closeout. The entire maintenance history is stored on the electronic system and to produce hardcopy reports for an NIS-2 submittal would be redundant. GPUN further recognizes that the submittal package shall not contain the significant information that would allow an actuate trend of activities that direct access to the database could provide.

In the GMS-2 system, the ISI components have an indicator that automatically signifies that maintenance on these components must also satisfy ASME Section XI requirements.

This process establishes the control of all ISI activities in that all post maintenance requirements in compliance with ASME Section XI shall be performed. Through this process, the ANII is notified of the planned activity.

A review of the maintenance histories for the past two refueling outages indicated a considerable amount of maintenance was performed on Class 2 and 3 valves, four inches and under; and as a standard maintenance practice the bolting was replaced. Without the aid of the GMS-2 system, a misinterpretation of the data could lead to the conclusion that these replacements were due to failures. However, GPUN has established a practice that allows the maintenance department to replace components with similar components. Replacements in kind may consist of only replacing a small bolt at a flanged connection. Such replacements may or may not result from any deficiencies related to inservice but rather the results of standard maintenance practice.

GPUN respects the intent of the Code to force operating facilities to focus attention on the maintenance trends of their units; however, GPUN has established a maintenance tracking system for the entire plant. This far exceeds the boundaries of ISI.

In conclusion, GPUN views the requirement to document all repairs and replacement on the NIS-2 report as being impractical. The level of information offered with the NIS-2 would be superficial and the apparent observations may not necessarily yield the correct trend. To fully detail the job histories that resides in the GMS-2 data base for all repairs and replacements would be redundant. This act would certainly negate GPUN's accomplishment to reduce hard copy files and shall burden our staff to prepare documents that may not prove to be beneficial.

Attachment to
Relief Request R10

CONFIGURATION[1]	REPAIRS		REPLACEMENTS	
	WELDED	NON-WELDED	WELDED	NON-WELDED
PRESSURE RETAINING	NIS-2	-	NIS-2	NIS-2[2]
ATTACHMENT PRESSURE RETAINING	NIS-2	-	NIS-2	-
NON-PRESSURE RETAINING	-	-	-	-

NOTE: 1 - For component greater that 1 inch in Category IWB and greater than 4 inches in categories IWC, IWD, and IWF.

2 - Due to service induced failure only.

CHAPTER 2
EXEMPTION AND INTERPRETATION

2.1 Interpretation

The Inservice Inspection Program Update identifies certain components that are exempt, excluded or limited where the volumetric or surface inspection requirements based on sections of the ASME Section XI 1986 edition may simply not be required. The following is provided to document our interpretation of the Code allowed exemptions that shall apply to this program update.

2.1.1 It is the intent of this program update to invoke the exemptions allowed by Article IWB-1220.

2.1.2 For "B-G-1" category examinations performed on Class 1 pumps, the examinations shall be limited to at least one pump in each group of pumps performing similar functions in the system. It is our interpretation, taken from Table IWB-2500-1, Examination Category B-G-1, Note 3 in conjunction with Table IWB-2500-1, Examination Category B-L-2, Note 1, that the selection rule stated above is permissible.

2.1.3 For "B-G-1" category examinations performed on Class 1 valves, the examinations shall be limited to at least one valve within each group of valves that are of the same size, constructional design and manufacturing method and that perform similar functions in the system. It is our interpretation, taken from Table IWB-2500-1, Examination Category B-G-1, Note 3, in conjunction with Table IWB-2500-1, Examination Category B-M-2, Note 3, that the selection rule stated above is permissible.

2.1.4 For "B-G-2" category examinations performed on Class 1 pumps, the examinations shall be limited to at least one pump in each group of pumps performing similar functions in the system. It is our interpretation, taken from Table IWB-2500-1, Examination Category B-G-2, Note 2 in conjunction with Table IWB-2500-1, Examination Category B-L-2, Note 1, that the selection rule stated above is permissible.

2.1.5 For "B-G-2" category examinations performed on Class 1 valves, the examinations shall be limited to at least one valve within each group of valves that are of the same size, constructional design and manufacturing method and that perform similar functions in the system. It is our interpretation, taken from Table IWB-2500-1, Examination Category B-G-2, Note 2, in conjunction with Table IWB-2500-1, Examination Category B-M-2, Note 3, that the selection rule stated above is permissible.

2.1.6 It is our interpretation, taken from Table IWB-2500-1, Examination Category B-H, Extent and Frequency of Examination, Inspection Plan B, that facilities entering their third and fourth inspection interval are excluded from the requirement of performing category B-H examinations. Therefore, it is the intent of this program update to exclude category "B-H" examinations from the schedule.

2.1.7 It is our interpretation, taken from Table IWB-2500-1, Examination Category B-K-1, Extent and Frequency of Examination, Inspection Program B, that facilities entering their third and fourth inspection interval are excluded from the requirements of performing Category B-K-1 examinations, Therefore, it is the intent of this program update to exclude Category "B-K-1" examinations from the schedule.

2.1.8 It is the intent of this program update to invoke the exemption allowed by Article IWC-1221.

2.1.9 It is the intent of this program update to invoke the exemptions allowed by Article IWC-1222.

2.1.10 It is the intent of this program update to invoke the exemptions allowed by Article IWC-1230.

2.1.11 Table IWC-2500-1, Examination Category C-F-1 excludes Class 2 pressure retaining welds in Austenitic Stainless Steel or High Alloy Piping having a nominal wall thickness less than 3/8" for piping greater than NPS 4. Therefore, it is the intent of this program update to invoke this exclusion.

2.1.12 Table IWC-2500-1 examination category C-F-2 excludes Class 2 pressure retaining welds in carbon or low alloy steel piping having a nominal wall thickness less that 3/8" for piping greater than NPS 4. Therefore, it is the intent of this program update to invoke this exclusion.

2.1.13 It is the intent of this program update to invoke the exemption allowed by Article IWD-1220.1.

CHAPTER 3
BOUNDARY CLASSIFICATION

3.1 Boundary Classification

In compliance with the ASME Code Section XI, IWA-1400(a), GPU Nuclear has determined the appropriate code class(es) for each component of the Oyster Creek Nuclear Generating Station, identified the system boundaries for each class of component subject to inspection and those components exempted from examination requirements. This update to the Section XI 1986 edition without addenda has required NRC to re-establish the boundaries in order to satisfy the application of inspection and testing under the rules of section XI IWA-1320.

For ASME Class 1 (Quality Group A), the references for identifying system boundaries and components was taken from 10CFR50.2V, the definition for reactor coolant boundary, 10CFR50 App.A, and NUREG 0822.

For ASME Class 2 (Quality Group B) and Class 3 (Quality Group C), the reference for identifying system boundaries and components was taken from NRC Regulatory Guide 1.26, "Quality Group Classifications and Standards for Water-Steam and Radioactive Waste-containing components of Nuclear Power Plant".

For establishing the logical boundary breaks to include or exclude portions of systems in accordance with Section XI IWA-1320(e), GPUN's Nuclear Safety Related Classification was used as well as ANSI/ANS-52.1, "Nuclear Safety Criteria for the Design of Stationary Boiling water reactor plants".

GPU Nuclear's Quality Classification list was used to further evaluate systems and components in the ISI boundary based on the definitions for Nuclear Safety Related, defined in the GPU Nuclear Corp. Operational Quality Assurance Plan.

3.2 ISI Boundary Classification System Summary

Tables 3-1, 3-2 and 3-3 summarize the ASME Class 1, 2, and 3 system boundaries, respectively. The system description and boundary justification is contained in Appendix 3-1, "Oyster Creek systems ISI requirements". The ISI boundary drawings are contained in Appendix 3-2 "ISI Boundary Drawings".

TABLE 3-1

CLASS 1 SYSTEM SUMMARY

SYSTEM	ISI BOUNDARY DRAWING	REMARKS
ISOLATION CONDENSER	3E-211-A1-001	Class 1 to 2 transitions at valves V-14-31, 32, 34 and 35.
CORE SPRAY	3E-212-A1-001	Class 1 to 2 transitions at V-20-18, 21, 40 and 41.
POISON	3E-213-A1-001	Class 1 to 2 transition at V-19-16.
SHUTDOWN COOLING	3E-214-A1-001	Class 1 to Class 2 transitions at V-17-1, 2, 3, 55, 56, and 57.
CLEANUP	3E-215-A1-001	Class 1 to non-class transitions at V-16-2, 3, 14, 61 and 64.
HEAT COOLING	3E-216-A1-001	Transition from Class 1 to Non-Class at V-31-2.
RECIRCULATION	3E-223-A1-001	Entire System
CONTROL ROD DRIVE RETURN	3E-225-A1-002	Transition from Class 1 to Non-Class at V-15-26.
MAIN STEAM	3E-411-A1-001	Transition from Class 1 to Class 2 at V-1-9 and 10.
FEEDWATER	3E-422-A1-001	Transition from Class 1 to Class 2 at V-2-71 and 72.

TABLE 3-2

CLASS 2 SYSTEMS SUMMARY

SYSTEM	ISI BOUNDARY DRAWING	APPLICABLE REG. GUIDE 1.26 PARAGRAPH	REMARKS
ISOLATION CONDENSER	3E-211-A1-001	C.1.a.(1)	EMERGENCY CORE COOLING
CORE SPRAY	3E-212-A1-001	C.1.a.(1)	EMERGENCY CORE COOLING
AUTOMATIC DEPRESSURATION	3E-411-A1-001	C.1.a.(1)	EMERGENCY CORE COOLING
POISON	3E-213-A1-001	C.1.b.(1)	RX. SHUTDOWN
SHUTDOWN COOLING	3E-214-A1-001	C.1.b.(2)	RESIDUAL HEAT REMOVAL (AUGMENTED)
SCRAM DISCHARGE	3E-225-A1-002	C.1.b.(1)	RX. SHUTDOWN
HYDRAULIC CONTROL UNITS	3E-225-A1-001	C.1.b.(1)	RX. SHUTDOWN
CONTAINMENT SPRAY	3E-241-A1-001	C.1.a.(2)	CONTAINMENT HEAT REMOVAL
MAIN STEAM	3E-411-A1-001	C.1.C	STOP & BYPASS VALVE (AUGMENTED)
FEEDWATER	3E-422-A1-001	C.1.C	SHUTOFF VALVE
DEMIN. WATER TRANSFER	3E-523-A1-001	Not Applicable	CONTAINMENT PENETRATION
CLOSED COOLING WATER	3E-541-A1-001	Not Applicable	CONTAINMENT PENETRATION
DRYWELL FLOOR & EQUIP DRAINS	3E-570-A1-001	Not Applicable	CONTAINMENT PENETRATION

TABLE 3-3

CLASS 3 SYSTEMS SUMMARY

SYSTEM	ISI BOUNDARY DRAWING	APPLICABLE REG. GUIDE 1.26 PARAGRAPH	REMARKS
ISOLATION CONDENSER	3E-211-A1-001	C.2.a.(1)	CONDENSERS ARE CLASS 3.
FUEL POOL COOLING	3E-251-A1-001	C.2.a.(4)	SPENT FUEL STORAGE
CONDENSATE TRANSFER	3E-424-A1-001	C.2.a.(1)	PROVIDES MAKE-UP COOLING WATER TO ISOLATION CONDENSERS.
SERVICE WATER	3E-531-A1-001	C.2.a.(4)	SECONDARY COOLING SYSTEM.
EMERGENCY SERVICE WATER	3E-532-A1-001	C.2.a.(2)	PRIMARY COOLING TO CONTAINMENT SPRAY SYSTEM.
CLOSED COOLING WATER	3E-541-A1-001	C.2.a.(4)	COOLS FUEL POOL COOLING. COOLS SHUTDOWN COOLING.

APPENDIX 3A

OYSTER CREEK SYSTEM

ISI REQUIREMENTS

APPENDIX 3A
OYSTER CREEK SYSTEM
ISI REQUIREMENTS

TABLE OF CONTENTS

REACTOR COOLANT SYSTEM

REACTOR VESSEL

A.

BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50.2

B. FUNCTION

The Reactor Vessel is the central component of the reactor coolant pressure boundary. It contains the reactor core, reactor internal components, and the reactor moderator (water). It provides a high integrity barrier against the release of radioactive materials, and a floodable volume in which the reactor core can be adequately cooled in the event of a breach in the primary system external to the reactor vessel.

C. DESCRIPTION

The Reactor Vessel is a vertical, cylindrical pressure vessel. The base plate material is alloy steel SA-302 Grade B modified by the addition of nickel. The vessel interior is clad with Type 304 stainless steel applied by weld overlay.

The reactor vessel is 805 5/16 inches tall from the bottom of the support skirt to the top of the head vent nozzle flange face. It has an inside diameter of 213 inches and a design minimum wall thickness of the cylindrical section of 7 1/8 inches. The lower reactor head wall thickness is 8 3/4 inches. The additional structural strength provided in the bottom head is to compensate for the control rod drive and nuclear instrument penetrations.

The cylindrical section of the vessel consists of four cylindrical shell courses. Each shell course consists of three rolled plates each welded together along the vertical seams. The lower head is welded to the cylindical section. The upper head is welded to a flange (head flange) that is bolted to a mating flange (vessel flange) that is welded to the cylindrical section.

The head is bolted down using sixty-four studs and nuts with the studs threaded into bushings in the vessel flange.

There is a total of 245 Nozzles; 213 in bottom head, 27 in cylindrical shell, 2 in flange, and 3 in closure head.

The Reactor Vessel is supported by a steel skirt. The top of the skirt is welded to the bottom of the vessel joint at the lower head. The base of the skirt is continuously supported by a ring girder fastened to a concrete foundation (reactor pedestal) which carries the load through the drywell to the Reactor Building foundation slab.

The Reactor Vessel is located inside a biological shield within the drywell. The biological shield is vertically supported by the reactor pedestal and laterally by biological shield-to-containment stabilizers. The vessel is laterally supported inside the biological shield by four vessel-to-biological-shield stabilizers.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemptions: IWB-1220(a)
IWB-1220(b)
IWB-1220(c)

Table IWB-2500-1 Category B-H

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Augmented: NUREG-0619, "BWR Feedwater Nozzle and Control Rod Drive Return Line Nozzle Cracking".

Generic Letter 88-01
NUREG-0313, Rev.2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

Technical Specification requirement for inspection of both Core Spray Sparger.

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.3
2. Oyster Creek Operational Plant Manual, Module 30, Rev.0
3. Drawing CE 232-560 "General Arrangement"

MAIN STEAM SYSTEM

A. BASIS

QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
A	NSR	10CFR50.2
B		REG.GUIDE 1.26, C.1.C

B. FUNCTION

The Main Steam System receives steam from the Nuclear Steam Supply System and transports the steam to the high pressure (HP) turbine and to the other steam systems. The MS System also bypasses steam to the main condenser when reactor steam generation exceeds turbine steam demand.

C. DESCRIPTION

Main Steam Lines

Steam generated from the reactor leaves the vessel via two identical 24" main steam lines commonly referred to as the North (A) or South (B) steam lines. The vessel relief valves (5) and safety valves (9) are located on the steam lines. Downstream of the Relief and Safety valves, the steam passes through identical flow restrictors which provide steam flow measurement and will restrict flow in the advent of a downstream pipe break.

The steam then flows past inboard and outboard isolation valves NS03A&B and NS04A&B, respectively. The steam line outboard isolation valves are located in the steam and feedwater pipe tunnel (trunion room) which is part of secondary containment. The steam lines exit the trunion room into the turbine building where they are merged into a 30" header or manifold used to distribute steam to the various steam supply systems.

The 30" manifold connects steam lines A and B, and distributes steam as follows:

- Four 18" lines supply the main turbine steam chest.
- A 2.5" line supplies the auxiliary steam system.
- A 20" line supplies the turbine bypass valves. These valves, operated by the turbine control system, dump steam to the condensers to control reactor pressure when steam generation is greater than turbine steam demand.
- A 5" line taps off the line to the bypass valves to supply the shaft sealing system.

Reactor Head Vent Line

A connection on steam line A continuously vents the reactor head through manual valve V-25-23; this prevents noncondensible gasses from collecting in the reactor vessel.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemption: IWB-1220(b)
Table IWB-2500-1 Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Class 2 - ASME Section XI; IWC

Augmented: Table IWC-2500-1 Category C-H" Pressure Test"

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.4.9, Rev.1
2. Oyster Creek Operational Plant Manual, Module 26, Rev.1
3. Oyster Creeks, P&ID BR2002, "Main Steam System"
4. Oyster Creeks ISI Boundary Drawing, 3E-411-A1-1000

FEEDWATER SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50.2 NUREG 0822
	B		REG.GUIDE 1.26, C.1.C

B. FUNCTION

The feedwater system supplies heated, demineralized water from the Condensate System to the reactor vessel to maintain reactor level. Additionally, the Feedwater System assists the emergency core cooling systems to maintain reactor level during accident conditions.

C. DESCRIPTION

Each of the three reactor feedwater pumps takes suction from one of the intermediate pressure feedwater heaters and discharges through one of three high pressure feedwater heaters, and heater string outlet valves, V-2-10, V-2-11, and V-2-12, to a common feedwater header.

The outlet valves are where the ISI boundary begins. The header separates into two lines prior to penetrating the containment vessel. Each line contains two check valves (one outside containment and one inside containment) and a manually operated isolation valve inside containment.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemptions: Table IWB-1220(b)
Table IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Class 2 - ASME Section XI; IWC & IWF

Exemptions: IWC-1222(a)
IWC-1222(b)

Non-Exempt: Table IWC-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.49, Rev.1
2. Oyster Creek Operational Plant Manual, Module 17, Rev.0
3. Oyster Creeks P&ID BR2003, "Condensate & Feedwater System"
4. Oyster Creek ISI Boundary Drawing, 3E-422-A1-001

REACTOR RECIRCULATION SYSTEM

A.

BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50.2

B. FUNCTION

The Reactor Recirculation system has been designed to perform the following function:

Provide forced circulation of reactor coolant through the core to overcome the power density limitation of the fuel.

Provide a variable coolant (moderator) flow through the core to control reactor power without manipulation of the control rods.

C. DESCRIPTION

The Reactor Recirculation system consists of five piping loops A, B, C, D and E, which take suction from, and discharge to, the reactor vessel. Each loop contains the following major components: Recirculation pump, pump suction valve, pump discharge valve, and discharge bypass valve.

The five recirculation pumps, arranged in parallel, take suction from the reactor vessel downcomer annulus through individual reactor recirculation outlet nozzles and the suction isolation valves. Pump discharge flow passes through individual discharge isolation valves and re-enters the lower head of the reactor through five individual reactor recirculation inlet nozzles. A two-inch line containing a valve bypasses each pump discharge valve. This path allows a minimum flow during pump starting and provides a small backflow to keep an idle loop warm.

D. INSPECTION REQUIREMENT

Class 1	-	ASME Section XI;	IWB and IWF
		Exemption:	IWB-1220(b)
		Table	Table IWB-2500-1 Category B-K-1
		Non-Exempt:	Table IWB-2500-1 Table IWF-2500-1
		Augmented:	Generic Letter 88-01 NUREG-0313, Rev.2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.4
2. Oyster Creek Operational Plant Manual, Module 38A, Rev.2
3. Oyster Creeks, P&ID GE 237E798, "Recirculation System"
4. Oyster Creeks ISI Boundary Drawing, 3E-223-A1-001

EMERGENCY CORE COOLING SYSTEMS

AUTOMATIC DEPRESSURIZATION SYSTEM

A.

BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	B	NSR	REG. GUIDE 1.26, C.1.A

B. FUNCTION

The Automatic Depressurization System (ADS) provides for a controlled blowdown of the primary system to rapidly reduce pressure during a small pipe break. This depressization permits Core Spray System injection prior to uncovering the fuel, when reactor vessel pressure is below 285 psig. In addition, the Electromatic Relief Valves (EMRVs) of the ADS open on an overpressurization condition to avoid unnecessary safety valve actuation during plant transients that result in a pressure increase.

C. DESCRIPTION

When actuated, ADS opens five EMRVs, to rapidly reduce system pressure. Steam flows directly from the Main Steam lines, through the EMRVs and discharge piping systems. There are two discharge piping systems, one for three EMRVs on the south main steam header and one for two EMRVs on the North header. Each discharge pipe terminates in a Y-quencher below the water level in the suppression pool. The system is open-ended from the EMRV's down to the torus during normal operations. It is for this reason that the components are to be exempted from schedule Section XI volumetric and surface examinations.

D. INSPECTION REQUIREMENTS

Class 2
- Section XI; IWC & IWF
- Exemption: IWC-1221(f)
- Non-Exempt: IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 6.3, Rev.0
2. Oyster Creek Operational Plant Manual, Module 05, Rev.1
3. Oyster Creek, P&ID BR2002, "Main Steam System"
4. Oyster Creek, ISI Boundary Drawing, 3E-411-A1-C01

CORE SPRAY SYSTEM

A. BASIS

QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
A	NSR	10CFR50.2
B	NSR	REG.GUIDE 1.26,C1A

B. FUNCTION

The Core Spray System provides cooling water to the reactor core in the form of a low pressure spray to remove decay heat and prevent fuel clad melting following any postulated loss of coolant accident (LOCA).

C. DESCRIPTION

The Core Spray System consists of two independent loops, System 1 and System 2. Each loop consists of two main pumps, two booster pumps and two sets of parallel isolation valves inside and outside the drywell.

The water supply for the system is held in the Torus Suppression Pool and is drawn through three strainers into a common header. The suction side of each of the four main pumps is supplied by an individual 12" pipe connected to the header.

D. ISI INSPECTION REQUIREMENTS

Class 1 - Section XI; IWB and IWF

Exemptions: IWB-1220(b)
Table IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Augmented: Generic Letter 88-01
NUREG 0313, Rev.2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

Class 2 - Section XI; IWC & IWF

Exemptions: IWC-1221(a)
IWC-1221(c)

Non-Exempt: Table IWC-2500-1
Table IWF-2500-1

Augmented: Thin wall (< 3/8") piping on the discharge side of the Core Spray Pumps.

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 6.3
2. Oyster Creek Operational Plant Manual, Module 10, Rev.0
3. Oyster Creek, P&ID 635D781, "Core Spray System"
4. Oyster Creek, ISI Boundary Drawing, 3E-212-A1-001

ISOLATION CONDENSER SYSTEM

A. BASIS

QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
A	NSR	10CFR50.2 NUREG 0822
B	NSR	REG.GUIDE 1.26, CLB
C	NSR	REG.GUIDE 1.26, C.2.A

B. FUNCTION

The Isolation Condenser System is an Emergency Core Cooling System that removes core residual and decay heat and depressurizes the reactor vessel in the event the main condenser is not available as a heat sink.

C. DESCRIPTION

The system is comprised of two independent loops A and B. The major components for each loop are as follows: full capacity isolation condenser (1), motor-operated steam supply isolation valves (2) and motor-operated condensate return isolation valves (2).

The system operates by natural circulation with steam flowing from the reactor vessel through the isolation condenser tubes. The condensate returns by gravity to the reactor vessel through the Reactor Recirculation System, forming a closed loop.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemptions: IWB-1220(b)

Tables IWB-2500-1, Category B-K-1

Non-Exempt: Tables IWB-2500-1 and IWF-2500-1

Augmented: Generic Letter 88-01
NUREG 0313, Rev.2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

Class 2 - ASME Section XI; IWC & IWF

Exemptions: IWC-1221(a)
IWC-1221(c)

Non-Exempt: Table IWC-2500-1
Table IWF-2500-1

Augmented: Generic Letter 88-01
NUREG 0313, Rev.2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

Class 3 - ASME Section XI; IWD & IWF

Exemptions: IWD-1220.1

Non-Exempt: Table IWD-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 6.3
2. Oyster Creek Operational Plant Manual, Module 23, Rev.0
3. Oyster Creek, P&ID GE-148F262 "Emergency Condenser"
4. Oyster Creek, ISI Boundary Drawing 3E-211-A1-001

RESIDUAL HEAT REMOVAL

SHUTDOWN COOLING SYSTEM

A.

BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
A		NSR	10CFR50.2
B			REG.GUIDE 1.26, C.1.B

B. FUNCTION

The shutdown cooling system removes decay heat during the second phase of cooldown, when reactor pressure is below 150 psig and temperature is below 350°F. The system cools the reactor from 350°F. to 125°F. within 36 hours after shutdown to permit vessel head removal for refueling.

The SDC System removes core decay heat while the reactor is in cold shutdown.

C. DESCRIPTION

The SDC system consists of three loops which take suction from recirculation loop E through a combined suction line and discharge back to recirculation loop E through a combined discharge line. The major components of the SDC system are: inlet isolation valve (1), inside the drywell, loop pump suction valves (3) outside drywell, pumps (3), heat exchangers, tube side (3), minimum flow valves (3), loop outlet throttle valve (3), loop outlet isolation valves (3), and an outlet isolation valves (1) inside drywell.

The system is normally isolated. The system containment isolation valves, V-17-19 and V-17-54, provide isolation of the SDC System loops from primary reactor pressure.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemptions: IWB-1220(B)

Tables IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Augmented: Generic Letter 88-01
NUREG 0313, Rev.2

Class 2 - ASME Section XI; IWC

Augmented: Table IWC-2500-1, for Pressure Test Only

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.4.7, Rev.0
2. Oyster Creek Operational Plant Manual, Module 45, Rev.2
3. Oyster Creek, P&ID GE 148F711
4. Oyster Creek, ISI Boundary Drawing, 3E-214-A1-001

CONTAINMENT HEAT REMOVAL SYSTEM

CONTAINMENT SPRAY SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	B	NSR	REG.GUIDE 1.26 C.1.A

B. FUNCTION

The Containment Spray System is designed to reduce containment pressure and temperature following a Design Basis Loss-of-Coolant Accident, by removing thermal energy from the containment atmosphere. This system also serves to limit offsite doses by reducing the pressure differential between the containment atmosphere and the external environment.

C. DESCRIPTION

The Containment Spray System consists of two redundant loops which deliver water from the Torus Suppression Pool to the spray headers in the drywell and the torus. Each loop consists of two pumps in parallel, two heat exchangers in parallel and two drywell spray header and a torus spray header.

The water supply for the system is held in the torus and is drawn through three strainers into a common header. The header also feeds the Core Spray system main pumps. Water is pumped from the suppression pool through the suction strainers to the heat exchangers, shell side, sprayed into the containment and flows by gravity back into the suppression pool via the vent headers. The water spray removes latent and sensible heat from the drywell. The heat is rejected to the Emergency Service Water system via the Containment Spray heat exchanger.

The piping sections from from valves V-21-5 & V-21-11 to the Drywell Spray Header and from valves V-21-13, 15, 17, & 18 to the Torus Header are open-ended during normal operation. It is for this reason that the components are exempted from scheduled volumetric and surface examinations.

D. INSPECTION REQUIREMENTS

Class 2 - ASME Section XI; IWC and IWF

Exemptions: IWC-1221(a)
IWC-1221(c)
IWC-1221(f)

Non-Exempt: Table IWC-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 6.2
2. Oyster Creek Operational Plant Manual, Module 9, Rev.1
3. Oyster Creek, P&ID 148F740, "Containment Spray System"
4. Oyster Creek ISI Boundary Drawing, 3E-241-A1-001

REACTOR SHUTDOWN SYSTEMS

STANDBY LIQUID CONTROL SYSTEM
(LIQUID POISON SYSTEM)

A.

LASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50
	B	NSR	REG.GUIDE 1.26, C.1.B(1)

B. FUNCTION

The Standby Liquid Control System must:

- Bring the reactor to a cold shutdown condition from full power steady state operating condition at any time independent of control rod capability.
- Mitigate the consequences of an anticipated transient without SCRAM event (ATWS) to ensure shutdown before unacceptable containment conditions develop.

C. DESCRIPTION

The Standby Liquid Control System consists of two independent subsystems with common suction and discharge paths. Major system components are: Liquid Poison Tank, Test Tank, SLC pumps (2), SLC pump discharge accumulators (2), and explosive injection (squib) valves (2).

When system operation is required, one of two positive displacement SLC pumps draws neutron absorber solution from the liquid poison tank.

The operating pump discharges through explosive injection valve V-19-44 or V-19-45 and to the reactor vessel. An in-vessel injection sparger admits the liquid poison just below the core plate, through the lower head.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemption: IWB-1220(b) and IWB-1220(c)

Table IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Class 2 - ASME Section XI; IWC

Exemption: IWC-1222(a)
IWC-1222(b)
IWC-1222(c)

Non-Exempt: Table IWC-2500-1, "Pressure Test"

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 9.3.5
2. Oyster Creek Operational Plant Manual, Module 46, Rev.1
3. Oyster Creek, P&ID 148F723 "Liquid Poison"
4. Oyster Creek, ISI Boundary Drawing, 3E-213-A1-001

CONTROL ROD DRIVE HYDRAULIC

A.

BASIS	QUALITY GROUP	EN INEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50.2
	B	NSR	REG.GUIDE 1.26,C.1.B(1)

B. FUNCTION

The CRD Hydraulic System supplies and controls the pressure and flow of reactor-grade water to the hydraulic control units and the reactor head cooling flow path.

The CRD Hydraulic System supplies water pressure to individual control rod drive mechanisms for normal rod movement, scrams, and mechanism cooling.

It provides a scram discharge volume to contain the water discharged from the Control Rod Drive mechanisms during a scram and also maintains the reactor coolant pressure boundary during and after a scram until the scram is reset.

Under emergency conditions, the CRD Hydraulic System supplies low flow, high pressure makeup to the reactor vessel via the CRD return nozzle.

C. DESCRIPTION

The CRD Hydraulic System supplies and controls the pressure and flow combinations to the drives through the 137 individual Hydraulic Control Units.

The CRD Hydraulic System takes water from either the Condensate pump discharge or the Condensate Storage Tanks, pressurizes it, filters it and with three pressure stages regulates its three output pressures. The first pressure stage supplies a minimal 1400 psig, for charging the accumulators on each individual Hydraulic Control Unit (HCU). The second pressure stage is adjusted to hold a differential pressure nominally at 250 psi above reactor pressure and supplies water for normal drive operation. The third stage is adjusted to hold a differential pressure nominally at 20 psi above reactor pressure and supplies cooling water to the drives.

One HCU is supplied for each control rod drive. It consists of a scram subsystem, a cooling water subsystem and a drive control subsystem. The scram subsystem provides the water and stored energy in the accumulators required for a fast insertion of the control rod. The cooling water subsystem provides the cooling for each of the 137 Control Rod Drive Mechanisms. The drive control subsystem, controlled by signals from the reactor manual control system, provides the force for rod insertion or withdrawal during normal operations.

The Scram Discharge Volume subsystem is used to limit the loss of and contain the Reactor Vessel water from all the drives during a scram. The scram discharge volume consists to two separate volumes, one for the north bank of 69 HCUs, and one for the south bank of 68 HCUs. During normal plant operation, the discharge volumes are empty with both the drain and vent valves open. During a scram, the discharge volumes is partly filled with the water from the discharge of the inserted drives. While scrammed, the control rod drive seal leakage continues to flow to the discharge

volumes until the volume pressure equals the reactor vessel pressure. When the scram signal is removed, the scram valves on the HCUs may be closed and the discharge volumes may be vented and drained.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB and IWF

Exemptions: IWB-1220(b)
Table IWB-2500-1, Category R-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Class 2 - ASME Section XI; IWC and IWF

Exemption: IWC-1222(a)
IWC-1222(b)

Non-Exempt: Table IWC-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 3.9.4.2
2. Oyster Creek Operational Plant Manual, Module II, Rev.0
3. Oyster Creek, GE 237E487, "Control Rod Drive"
4. Oyster Creek, 3E-225-A1-001
5. Oyster Creek, 3E-225-A1-002

REACTOR COOLANT AUXILIARY SYSTEM

REACTOR WATER CLEANUP SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50.2

B. Function

The Reactor Cleanup System is a filtration and demineralization system for maintaining the purity of the water in the Reactor Coolant System.

The system is designed to operate during all phases of normal plant operation.

C. DESCRIPTION

Under normal operation, reactor coolant flows under reactor pressure from the suction of Reactor Recirculation Pump B and a two-inch line from the reactor vessel low point to the supply line. The supply line has a motor operated isolation valve inside the drywell, V-16-1 and two parallel motor operated valves outside, V-16-2 and V-16-14. The outside isolation valves make the ASME Section XI Class 1 to non-class break. Flow then passes through the tubes of three series-connected regenerative heat exchangers and again through the tubes of two series-connected non-regenerative heat exchangers, filtered, demineralized, and pumped through the shell side of the regenerative (3-series) to the return line. The return line has one motor operated valve outside the drywell, V-16-61 and a check valve inside the drywell, V-16-62. The outside isolation valve makes the non-class to ASME Section XI Class 1 break.

The system is normally operated continuously during all phases of reactor operation. The system is automatically isolated from the Class 1 boundary under abnormal operating conditions.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB and IWF

Exemption: IWB-1220(b)

Table IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Augmented: Generic Letter 88-01
NUREG 0313, Rev.2, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping".

These inspections are also performed outside of the ISI boundary breaks for this system.

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.4.8, Rev.1
2. Oyster Creek Operational Plant Manual, Module 39, Rev.0
3. Oyster Creek, P&ID GE 148F444, "Cleanup Demineralizer System"
4. Oyster Creek, ISI Boundary Drawing, 3E-215-A1-001

CONTROL ROD DRIVE RETURN

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	A	NSR	10CFR50.2

B. LOCATION

See Control Rod Drive Hydraulic.

C. DESCRIPTION

See Control Rod Drive Hydraulic.

D. ISI INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB and IWF

Exemption: IWB-1220(b)

Table IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

E. REFERENCES

See Control Rod Drive Hydraulic.

REACTOR HEAD COOLING

A. BASIS

QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
A	NSR	10CFR50.2 APP.A,55

B. FUNCTION

The system is designed to meet the following objectives:

a. Condense steam and condensible gases in the vessel dome to assist in vessel head cooling during shutdown.
b. Prevent repressurization as the vessel is flooded to levels above the vessel flange and main steam nozzles to cool the upper portions of the vessel metal.
c. Provide vessel head cooling under the direct control of the Control Room Operator during shutdown, after local valve setting have been completed.
d. Permit reactor pressure to be reduced to atmospheric, and vessel head temperature to be reduced to approximately 140°F. without causing metal temperature differentials which would affect the integrity of the reactor vessel during its designed lifetime.

C. DESCRIPTION

The Head Cooling System consists of a single fog-spray nozzle located inside the top of the reactor pressure vessel head. The head spray water is supplied from the Condensate Storage Tank by the standby Control Rod Drive (CRD) Hydraulic System pump.

The Head Cooling System is connected to the vessel head nozzle by a removable 2-inch stainless steel pipe spool piece. A check valve is installed as the isolation valve inside the drywell. The isolation valve outside the drywell is an air operated globe valve which is remotely controlled from the Control Room and which will close automatically from an isolation signal.

D. INSPECTION REQUIREMENTS

Class 1 - ASME Section XI; IWB & IWF

Exemption: IWB-1220(b)

Table IWB-2500-1, Category B-K-1

Non-Exempt: Table IWB-2500-1
Table IWF-2500-1

Augmented: Generic Letter 88-01
NUREG 0313, Rev.2

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 5.4.11, Rev.1
2. Oyster Creek Operational Plant Manual,
3. Oyster Creek, P&ID GE237E487, "Control Rod Drive"
4. Oyster Creek, ISI Boundary Drawing 3E-216-A1-001

COOLING WATER SYSTEM

EMERGENCY SERVICE WATER SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	C	NSR	REG.GUIDE 1.26, C.2.A

B. FUNCTION

The Emergency Service Water System provides cooling water to the Containment Spray Heat exchangers and represents the heat sink for the energy released in a Loss-of-Coolant Accident.

C. DESCRIPTION

The Emergency Service Water system consists of two identical loops, 1 and 2.

Each loop contains the following major components: Emergency Service Water Pumps (2), Containment Spray Heat Exchangers (2), and containment spray heat exchangers outlet valves (1).

The pumps take suction in the intake structure from the canal and discharges to the containment spray heat exchanger, through an expansion pipe, pump discharge check valves, a combined discharge header, and the heat exchanger combined inlet header. System flow is through the tubes of the heat exchanger to cool containment spray counterflow through the shell. Water is discharged from the heat exchangers back to the canal.

D. INSPECTION REQUIREMENTS

Class 3 - ASME Section XI; IWD & IWF

Exemptions: IWD-1220.1

Non-Exempt: Table IWD-2500-1
Table IWF-2500-1

E. References

1. Updated Final Safety Analysis Report, Section 6.2
2. Oyster Creek Operational Plant Manual, Module 09, Rev.1
3. Oyster Creek, P&ID BR2005
4. Oyster Creek, ISI Boundary Drawing 3E-532-A1-001

SERVICE WATER SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	C		REG.GUIDE 1.26 C.2.A(4)

B. FUNCTION

The Service Water System (SWS) performs the following functions:

a. Provides seawater cooling to the tube side of the two Reactor Building Closed Cooling Water (RBCCW) heat exchangers during normal plant operation.

b. Provides seawater cooling to the tube side of the two Turbine Building Closed Cooling Water (TBCCW) heat exchangers when the Circulating Water System (CWS) is shutdown.

c. Provides a manual backup supply of seal water to the CWS pumps when their normal seal water supply is unavailable.

d. Maintains the Emergency Service Water (ESW) side of the Containment Spray heat exchangers full.

C. DESCRIPTION

The Service Water System is an open-loop system consisting of the following major components: Service water pumps (2), seal well, and associated piping and manually operated valves. The two service water pumps take suction from the intake structure and discharge to a common header. This header supplies the two Reactor Building closed cooling water heat exchangers. Each heat exchanger discharges to a common header; this header discharges to the seal well, and discharges to the plant's discharge canal.

A 2" line supplies keep-full pressure to the Emergency Service water system. Keeping full pressure maintains the ESW system pressurized and full of water to prevent water hammer and air binding of heat exchangers and piping within the ESW System.

D. INSPECTION REQUIREMENTS

Class 3 - ASME Section XI; IWD & IWF

Exemption: IWD-1220.1

Non-Exempt: Table IWD-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 9.2
2. Oyster Creek Operational Plant Manual, Module 44, Rev.0
3. Oyster Creek, P&ID BR2005, "Reactor & Turbine Bldg. Service Water System".
4. Oyster Creek, ISI Boundary Drawing, 3E-531-A1-001

REACTOR BUILDING CLOSED COOLING WATER SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	B		PENETRATE CONTAINMENT
	C		REG.GUIDE 1.26, C.2.A

B. FUNCTION

The RBCCW System supplies cooling water in the temperature range of 70°F. to 105°F. to reactor plant auxiliary equipment in the Reactor Building, drywell, and old radwaste facility during all modes of plant operation.

C. DESCRIPTION

The RBCCW system is a closed-loop cooling water system containing the following major components: RBCCW pumps (2), RBCCW heat exchangers (2), surge tank, chemical injection pump, chemical mixing tank, drywell isolation valves (4), and cooling loads shown below.

REACTOR BUILDING COMPONENTS	DRYWELL COMPONENTS
FUEL POOL HEAT EXCHANGERS (3)	REACTOR RECIRCULATION PUMP AND MOTOR COOLERS (5)
SHUTDOWN COOLING HEAT EXCHANGERS (3)	DRYWELL COOLING UNITS (5 WITH ONE SPARE).
SHUTDOWN COOLING PUMPS (3)	DRYWELL EQUIPMENT DRAIN TANK (1)
NON-REGENERATIVE HEAT EXCHANGER (2)	
CLEANUP RECIRCULATION PUMP COOLERS (2)	
CLEANUP AUXILIARY PUMP COOLER (1)	
PRECOAT PUMP COOLER (1)	
TUNNEL RECIRCULATION FANS AND CORNER ROOM COOLERS (2)	
CORE SPRAY PUMPS (2)	
CONTAINMENT SPRAY PUMPS (2)	
REACTOR BUILDING EQUIPMENT DRAIN TANK (1)	

RBCCW flow into and from the drywell passes through containment isolation valves V-5-147, -165, -166, and -167, which provide leak-tight isolation of the drywell upon actuation of a primary containment isolation signal. Valves V-5-165 and -166 are located inside the drywell, and valves V-5-147 and -167 are located outside the drywell in the Reactor Building. RBCCW flow branches inside the drywell to supply individual components, then recombines and exits the drywell.

D. INSPECTION REQUIREMENTS

Class 2 - ASME Section XI; IWC and IWF

Exemption: IWC-1222(a)
IWC-1222(b)
IWC-1222(c)

Non-exempt: Table IWC-2500-1
Table IWF-2500-1

Class 3 - ASME Section XI; IWD and IWF

Exemption: IWD-1220.1

Non-Exempt: Table IWD-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 9.2
2. Oyster Creek Operational Plant Manual, Module 35, Rev.0
3. Oyster Creek, P&ID BR2006, "Reactor Building Closed Cooling Water System".
4. Oyster Creek ISI Boundary Drawing, 3E-541-A1-001

CONDENSATE TRANSFER SYSTEM

A. BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	C		REG.GUIDE 1.26 C.2.A(1)

B. FUNCTION

The Condensate Transfer System provides condensate to the Control Rod Drive System and is one source of makeup for the Isolation Condenser.

C. DESCRIPTION

The Condensate Storage Tank (CST) is a 525,000 gallon tank that provides bulk storage of condensate for use throughout the plant. Two condensate transfer pumps take suction on a common header from the CST and exits the Chlorination Building and flows to the Turbine, Reactor, and Old Radwaste Building. In the Reactor Building the Condensate Transfer System supplies isolation condenser make-up water during emergency situations.

The CST provides a normal and supply volume to the Control Rod Drive Hydraulic System. It also provides a backup supply volume for Core Spray System in the event the torus is not available.

D. INSPECTION REQUIREMENTS

Class 3 - ASME Section XI; IWD & IWF

Exemption: IWD-1220.1

Non-Exempt: Table IWD-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Sectic 10.4.7
2. Oyster Creek Operational Plant Manual, Modul 57, Rev.0
3. Oyster Creek, P&ID BR2004, "Condensate Transfer System"
4. Oyster Creek, ISI boundary 3E-424-A1-001

FUEL POOL COOLING AND AUGMENTED FUEL POOL COOLING SYSTEMS

A.

BASIS	QUALITY GROUP	ENGINEERING CLASSIFICATION	ISI BASIS
	C	NSR	REG.GUIDE 1.26,C.2.A(4)

B. FUNCTION

The spent fuel storage pool stores irradiated core components, including depleted fuel assemblies.

The Fuel Pool Cooling and Augmented Fuel Pool Cooling Systems maintain the fuel pool water volume at a temperature low enough to prevent steaming and excessive thermal stress of the fuel pool floor and walls.

The Fuel Pool Cooling System maintains the quality of the water within acceptable limits to prevent loss of clarity or excessive corrosion of the pool or its contents.

C. DESCRIPTION

Fuel Pool Cooling

The Fuel Pool Cooling System consists of a single train which recirculates, cools, filters, and demineralizes fuel pool water, and if filled, reactor cavity water. The system contains the following major components: reactor cavity, spent fuel pool, equipment pool skimmer surge tank (2), pumps (2), heat exchangers (2), filter and demineralizer.

Augmented Fuel Pool Cooling

The augmented spent fuel cooling system operates separately or in parallel with the regular fuel pool pumps and heat exchangers to provide additional cooling capability when entire core unloading is required.

The augmented spent fuel cooling system consists of two full capacity pumps in parallel and one plate-type heat exchanger.

D. INSPECTION REQUIREMENTS

Class 3 - ASME Section XI; IWD & IWF

Exemption: IWD-1220-1

Non-Exempt: Table IWD-2500-1
Table IWF-2500-1

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 9.1.3
2. Oyster Creek Operational Plant Manual, Module 20, Rev.0
3. Oyster Creek, P&ID GE237E756, "Spent Fuel Pool Cooling"
4. Oyster Creek, ISI Boundary Drawing, 3E-251-A1-001

CONTAINMENT PENETRATION FOR NON NUCLEAR SAFETY RELATED SYSTEMS

CONTAINMENT PENETRATIONS FOR NON NUCLEAR SAFETY RELATED PIPING SYSTEMS

A. BASIS

Fluid system piping that penetrates the primary containment can be placed into one of two major configuration categories: (1) piping that contains reactor coolant, or (2) piping that doesn't contain reactor coolant. However, it is the function of a system that is taken into consideration more often that its configuration when making a determination for assigning ISI classifications (Class 1, 2 and 3). Guidance for determining ISI classifications has already been established in 10CFR50 and Regulatory Guide 1.26 for piping systems with configurations matching category No. 1 and in some cases for category No. 2 if the systems were determined to be Nuclear Safety related. For category No. 2 systems that are not Nuclear Safety Related or do not satisfy either of the Regulatory Guide 1.26 positions, C.1 or C.2, a Class 2.Classification was assigned for ISI purposes in accordance with ANSI/ANS-52.1-1983. The boundary breaks were made at the containment isolation valves and the first isolation valve inside containment. Although these systems are not Nuclear Safety Related in function, the piping penetration containment within the boundaries described above are classified Nuclear Safety Related.

B. FUNCTION

Containment Isolation.

C. DESCRIPTIONS

1. Demineralized Water Transfer

This system stores and supplies pure, demineralized water to service equipment throughout the plant including the Condensate Storage Tank. The system is not safety-related.

Demineralized water is supplied to the drywell through a removable spool piece at penetration X-23. The spool piece is installed during outages when primary integrity is not required. When primary containment is required, the spool piece is removed and blank flanges are installed on both pipe ends.

2. Drywell Equipment Drain Tank (DWEDT)

The Drywell Equipment Drain Tank is located inside the Drywell at floor level between A and E Reactor Recirculation pump. The DWEDT receives various equipment drains.

The contents of the tank is transferred to New Radwaste through Drywell penetration X-21.

3. Drywell Floor Drain Sump 1-8 (DWFDS)

The Drywell (Floor Drain) Sump 1-8 is located inside the Drywell, in the CRD Housing Room under the Reactor Vessel. As a low point within the Drywell, the DWFDS receives leakage via gravity downflow.

The contents are transferred to New Radwaste through Drywell penetration X-21.

D. INSPECTION REQUIREMENTS

Class 2 - ASME Section XI; IWC & IWF
Exemptions: IWC-1222(a)
IWC-1222(b)
IWC-1222(c)

Non-Exempt: Table IWC-2500-1
Category C-H (pressure test)

E. REFERENCES

1. Updated Final Safety Analysis Report, Section 6.2.4.1.
2. Oyster Creek Operational Plant Manual, Modules 15, Rev.0, & 57, Rev.0.
3. Oyster Creek P&IDs, BR2004, "Demineralized Water", JC147434, "Condensate Demineralizer", BR4114-5 "Reactor Building Containment Vessel Penetrations.
4. Oyster Creek ISI Boundary Drawing, 3E-524-A1-001, and 3E-570-A1-001.

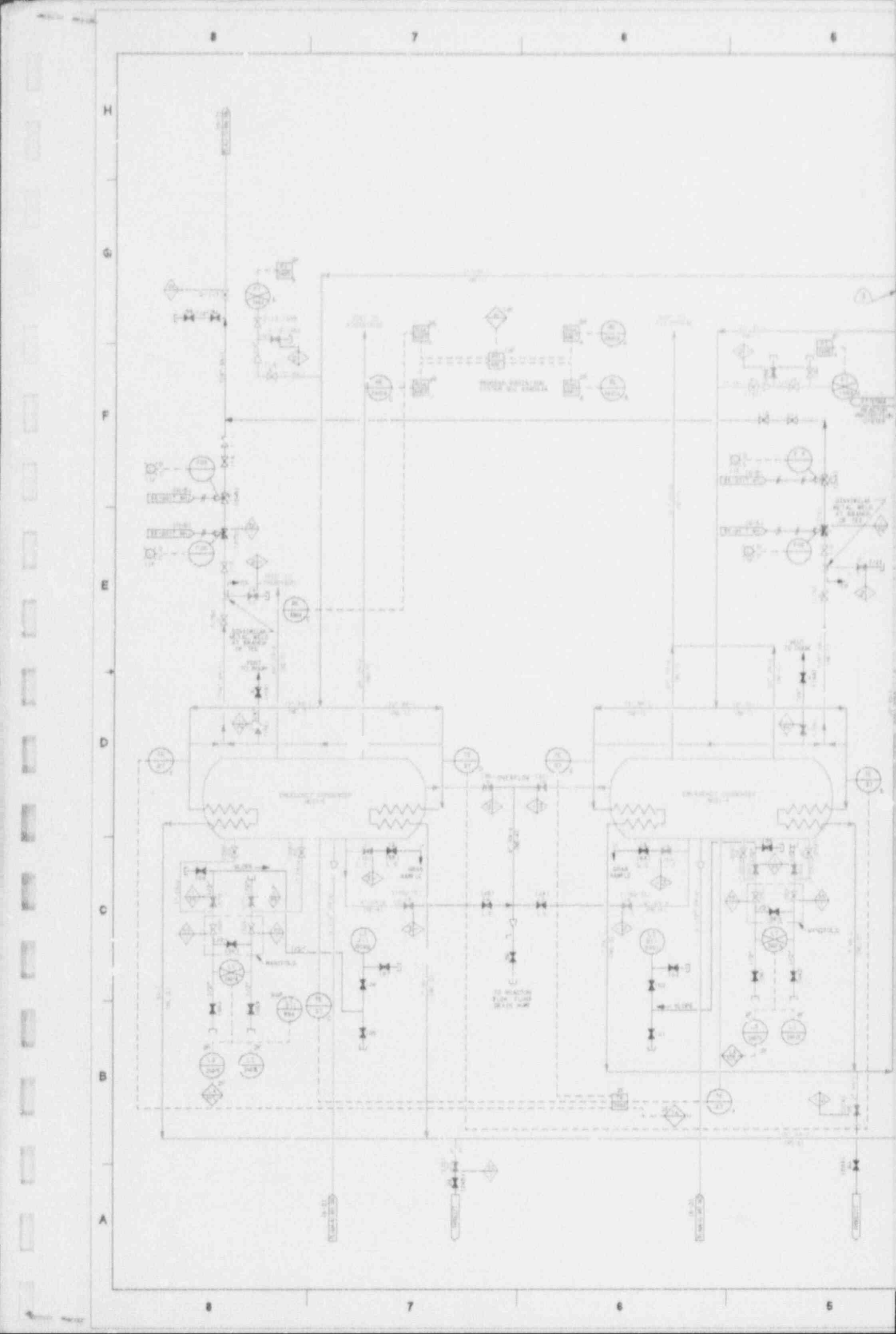
APPENDIX 3B

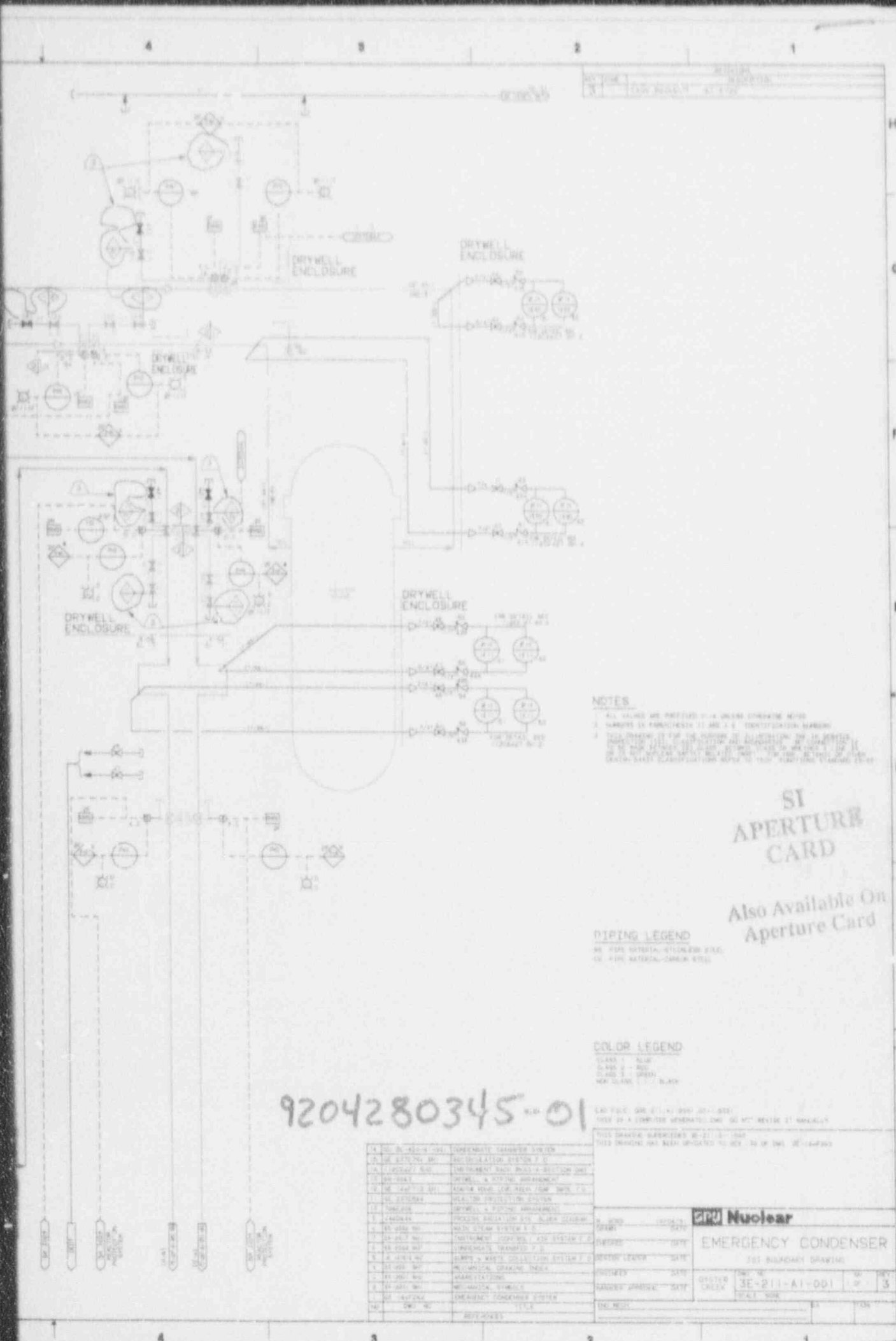
OYSTER CREEK SYSTEM

ISI BOUNDARY DRAWINGS

INDEX OF ISI BOUNDARY DRAWINGS

DRAWING NUMBER	TITLE
3E-211-A1-001	EMERGENCY CONDENSER SYSTEM
3E-212-A1-001	CORE SPRAY SYSTEM
3E-213-A1-001	LIQUID POISON SYSTEM
3E-214-A1-001	SHUTDOWN COOL SYSTEM
3E-215-A1-001	CLEAN-UP DEMINERALIZER SYSTEM
3E-216-A1-001	REACTOR HEAD COOLING
3E-223-A1-001	REACTOR RECIRCULATION SYSTEM
3E-225-A1-001	HYDRAULIC CONTROL UNIT
3E-225-A1-002	SCRAM DISCHARGE VOLUME
3E-241-A1-001	CONTAINMENT SPRAY SYSTEM
3E-251-A1-001	FUEL POOL COOLING
3E-411-A1-001	MAIN STEAM
3E-422-A1-001	FEEDWATER
3E-424-A1-001	CONDENSATE TRANSFER
3E-523-A1-001	DEMINERALIZED WATER TRANSFER
3E-531-A1-001	SERVICE WATER
3E-532-A1-001	EMERGENCY SERVICE WATER
3E-541-A1-001	RX. BLDG. CLOSED COOLING WATER
3E-570-A1-001	SUMP AND WASTE COLLECTION





NOTES

PIPING LEGEND

COLOR LEGEND

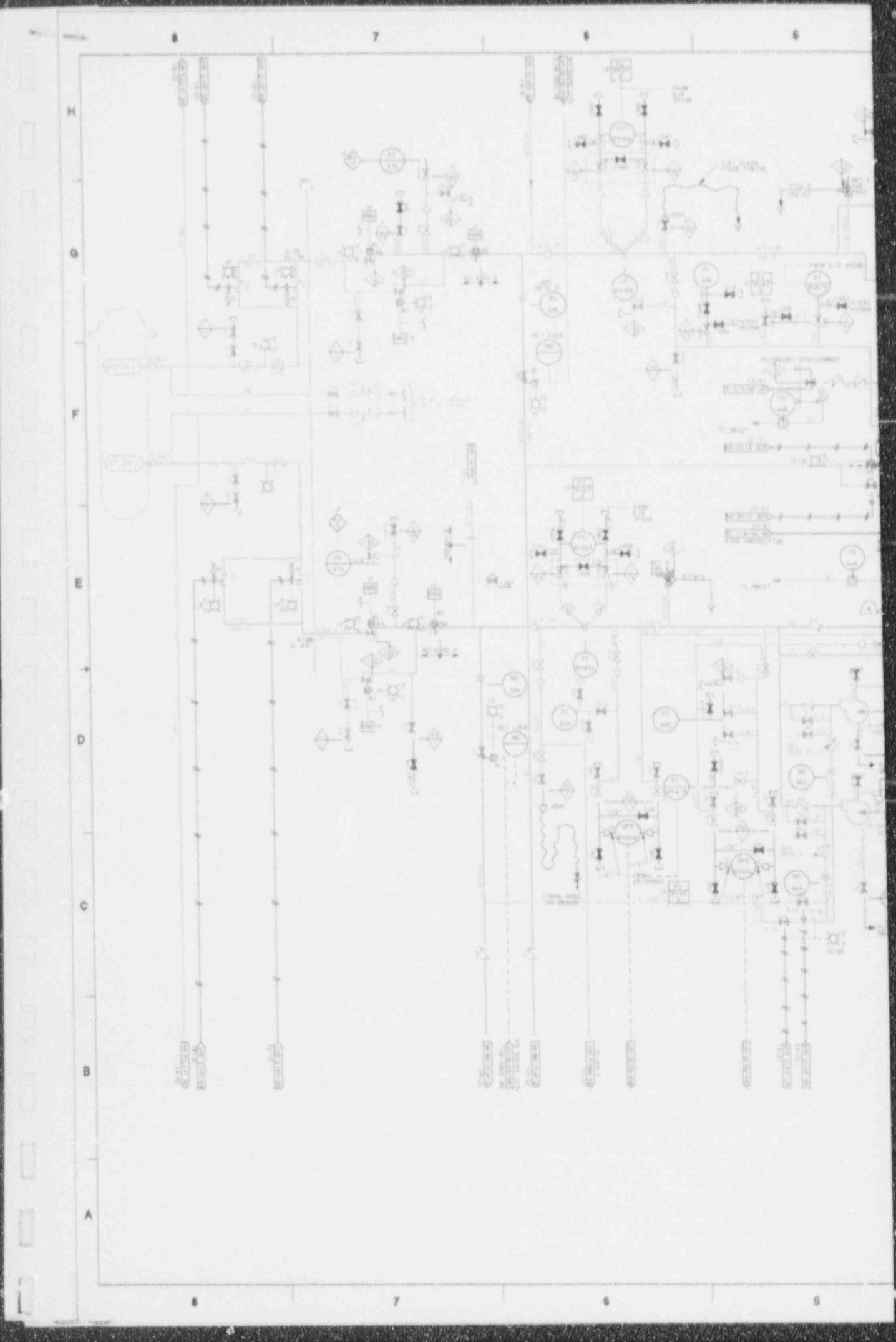
9204280345-01

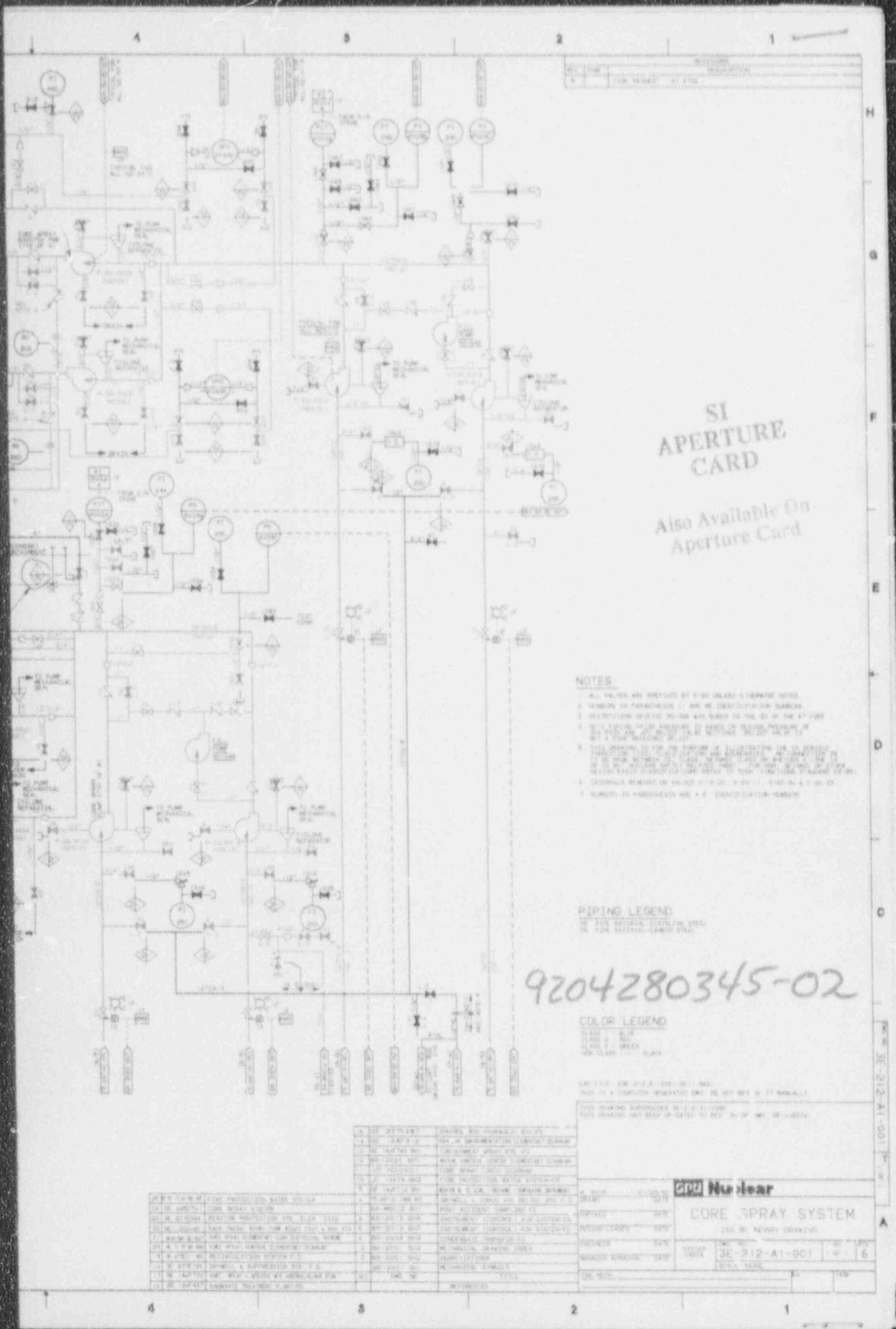
GPU Nuclear

EMERGENCY CONDENSER

3E-211-A1-001

3





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Also Available On
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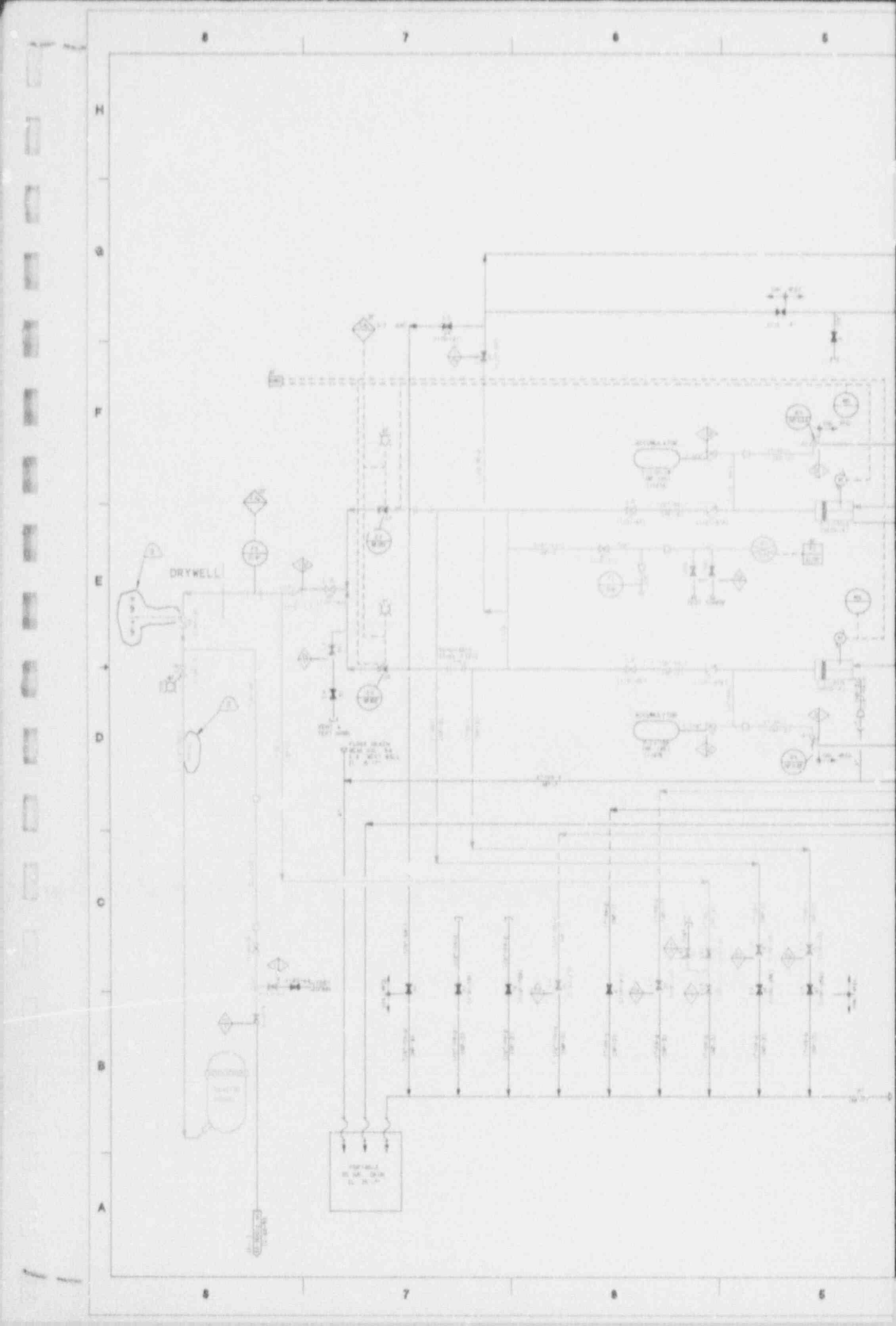
9204280345-02

CORE SPRAY SYSTEM

GPU Nuclear

3E-212-A1-001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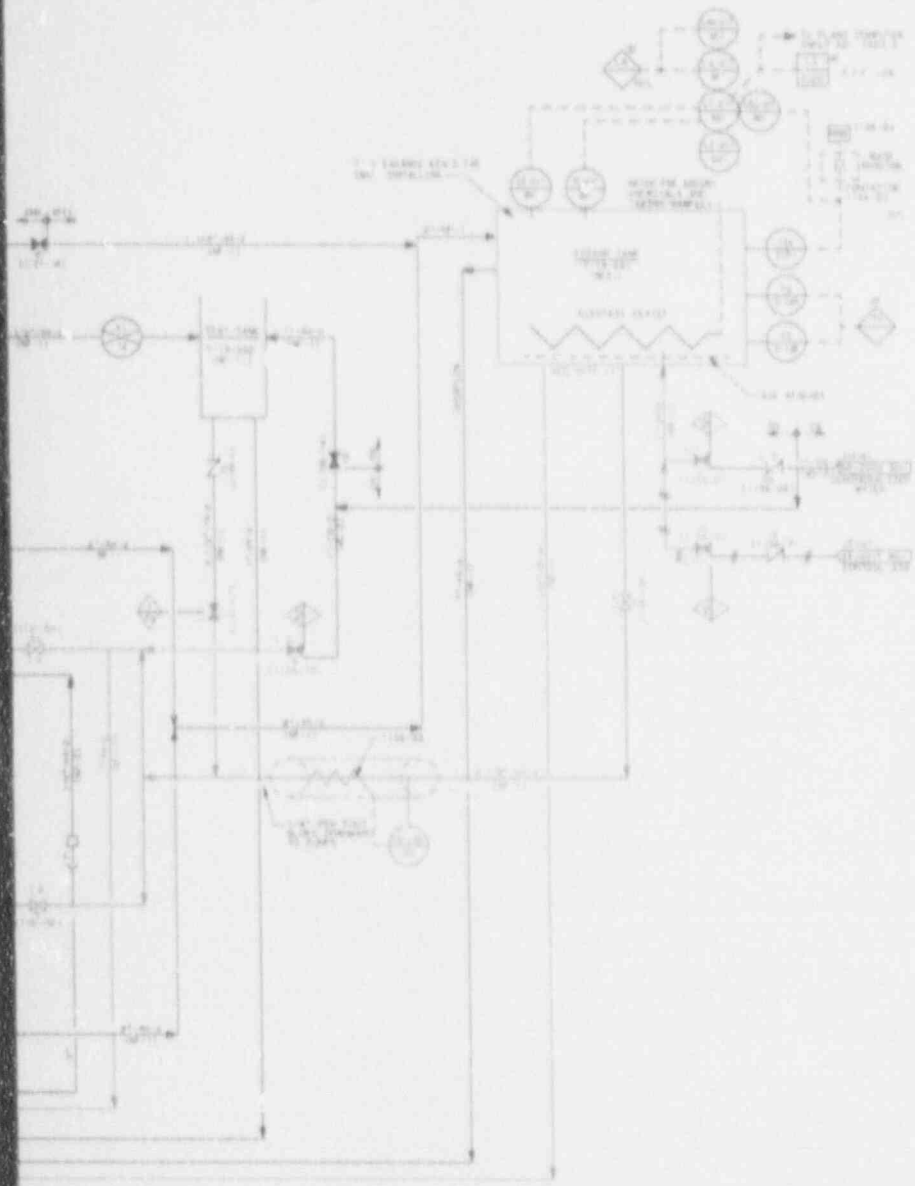

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NOTES:

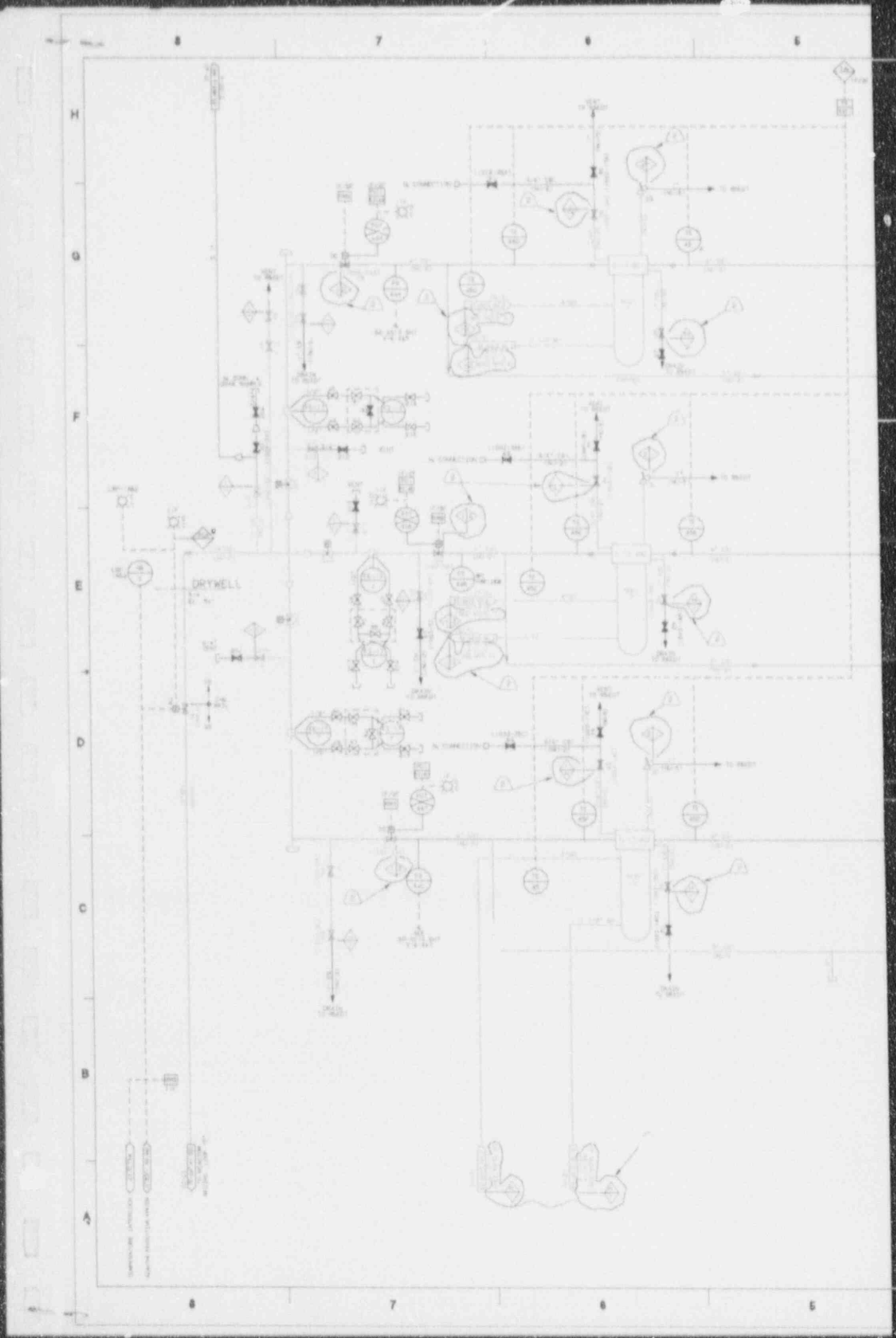
COLOR LEGEND

9204280345-03

GPU Nuclear

LIQUID POISON SYSTEM

3E-213-A1-001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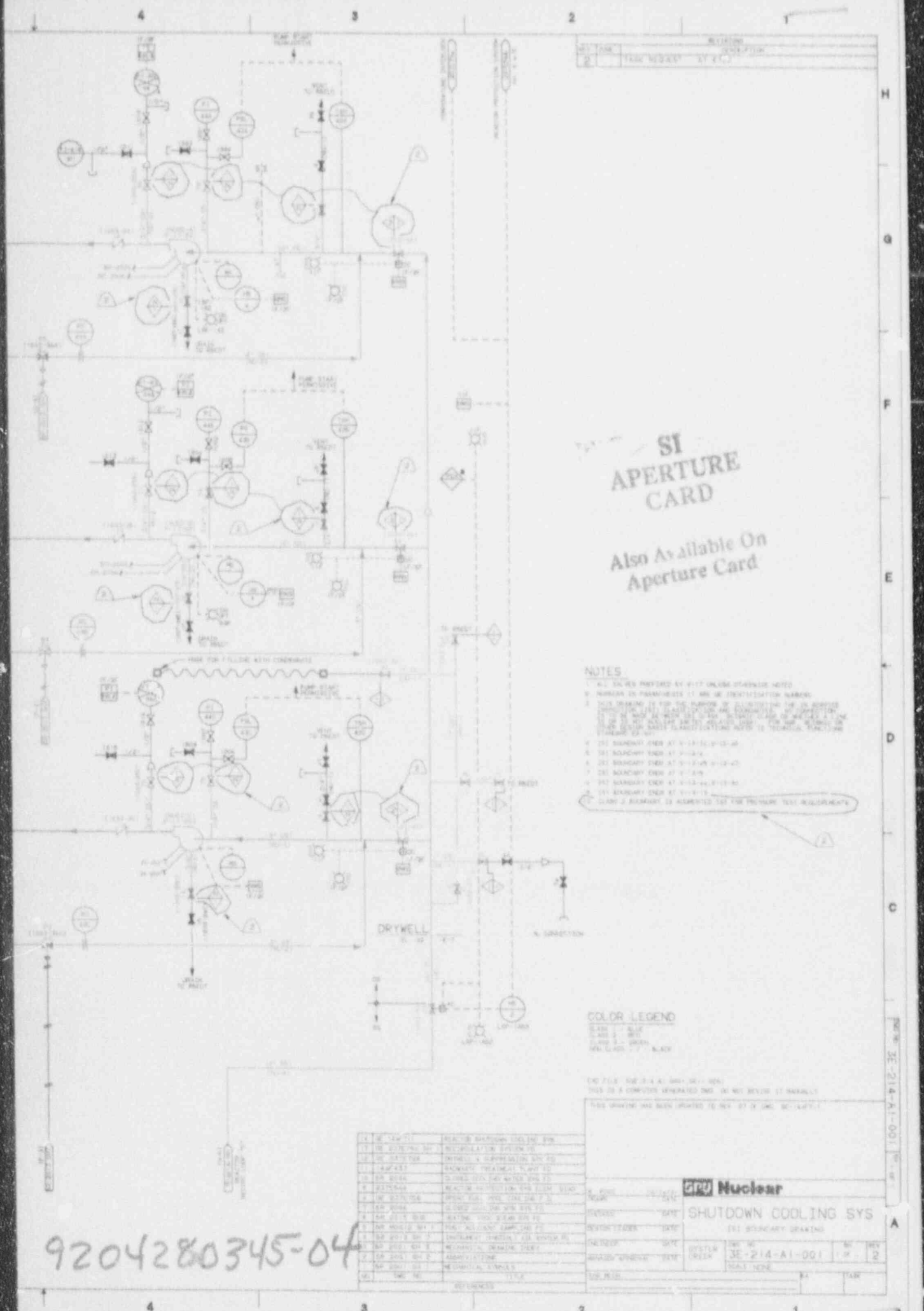

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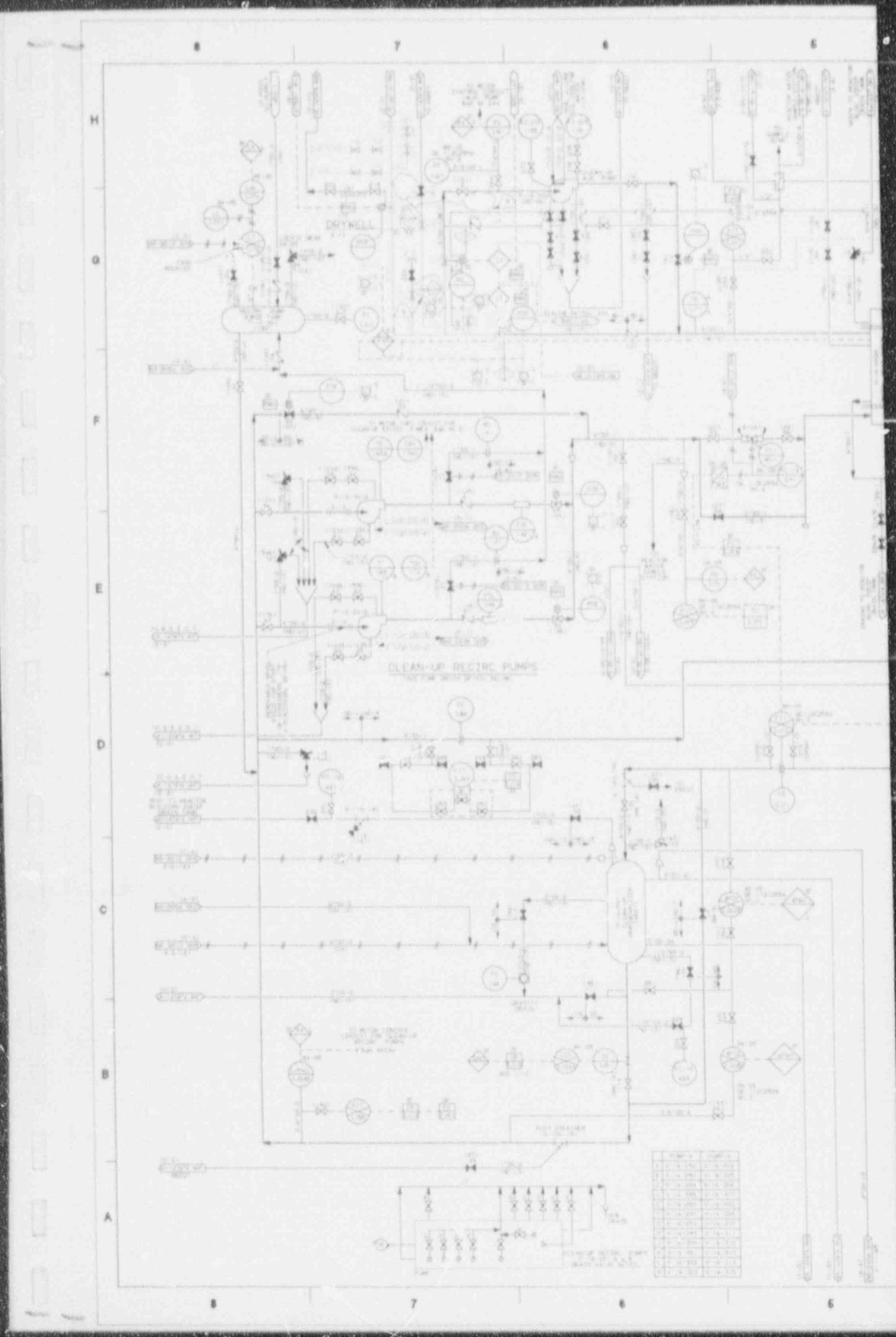
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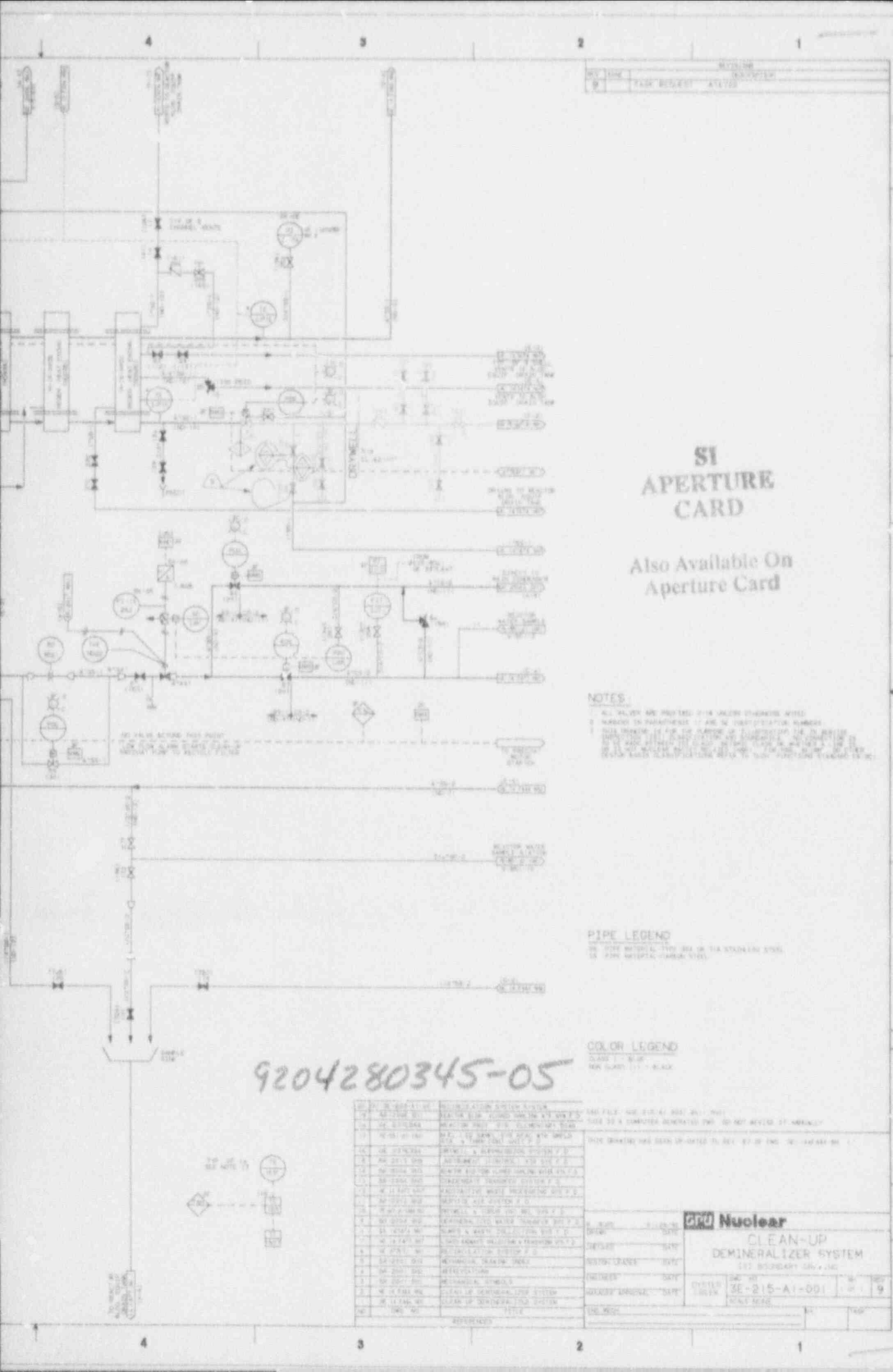
CLEAN-UP RECIRC PUMPS



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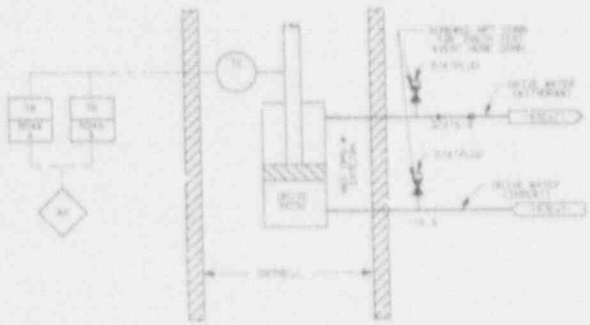
CLEAN-UP
DEMINERALIZER SYSTEM

3E-215-A1-001



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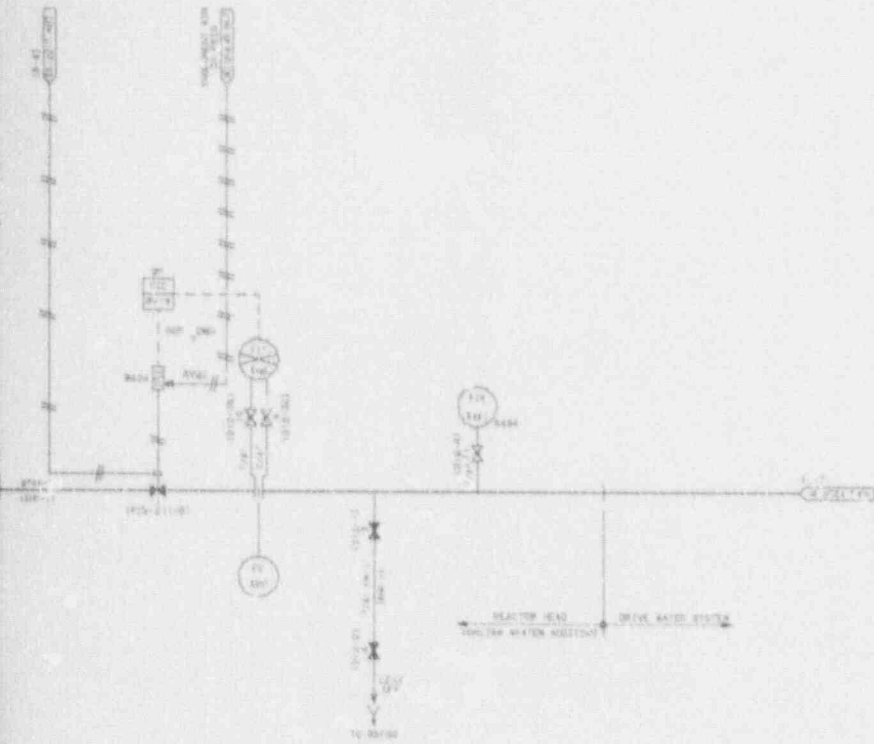

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NOTES

1. ALL VALVES ARE PREFIXED BY V-... UNLESS OTHERWISE NOTED
2. NUMBERS IN PARENTHESIS ( ) ARE GE IDENTIFICATION NUMBERS
3. HEAD COOLING SPRAY NOZZLE ...
4. THIS DRAWING IS FOR THE PURPOSE OF ILLUSTRATING THE IN SERVICE INSPECTION (ISI) CLASSIFICATION AND BOUNDARIES. NO CONNECTION IS TO BE MADE BETWEEN ISI CLASS, SEISMIC CLASS OR WHETHER A LINE IS OR IS NOT NUCLEAR SAFETY RELATED ... FOR ... SEISMIC OR OTHER DESIGN BASIS CLASSIFICATIONS REFER TO ... STANDARD ...

PIPING LEGEND

COLOR LEGEND

9204280345-06

NO	DWG. NO	TITLE
8		INSTRUMENT CONTROL AIR SYS P.D.
7		
6		REACTOR HEAD COOLING SYS P.D.
5	GE 237E447 SH 2	CONTROL ROD DRIVE SYS P.D.
4	GE 237E447 SH 1	CONTROL ROD DRIVE SYS P.D.
3		MECHANICAL DRAWING INDEX
2		ABBREVIATIONS
1		MECHANICAL SYMBOLS
	REFERENCES	

GPU Nuclear

REACTOR HEAD COOLING SYSTEM

ISI BOUNDARY DRAWING

DRAWN / DATE

CHECKED / DATE

ENGINEER / DATE

MANAGER APPROVAL / DATE

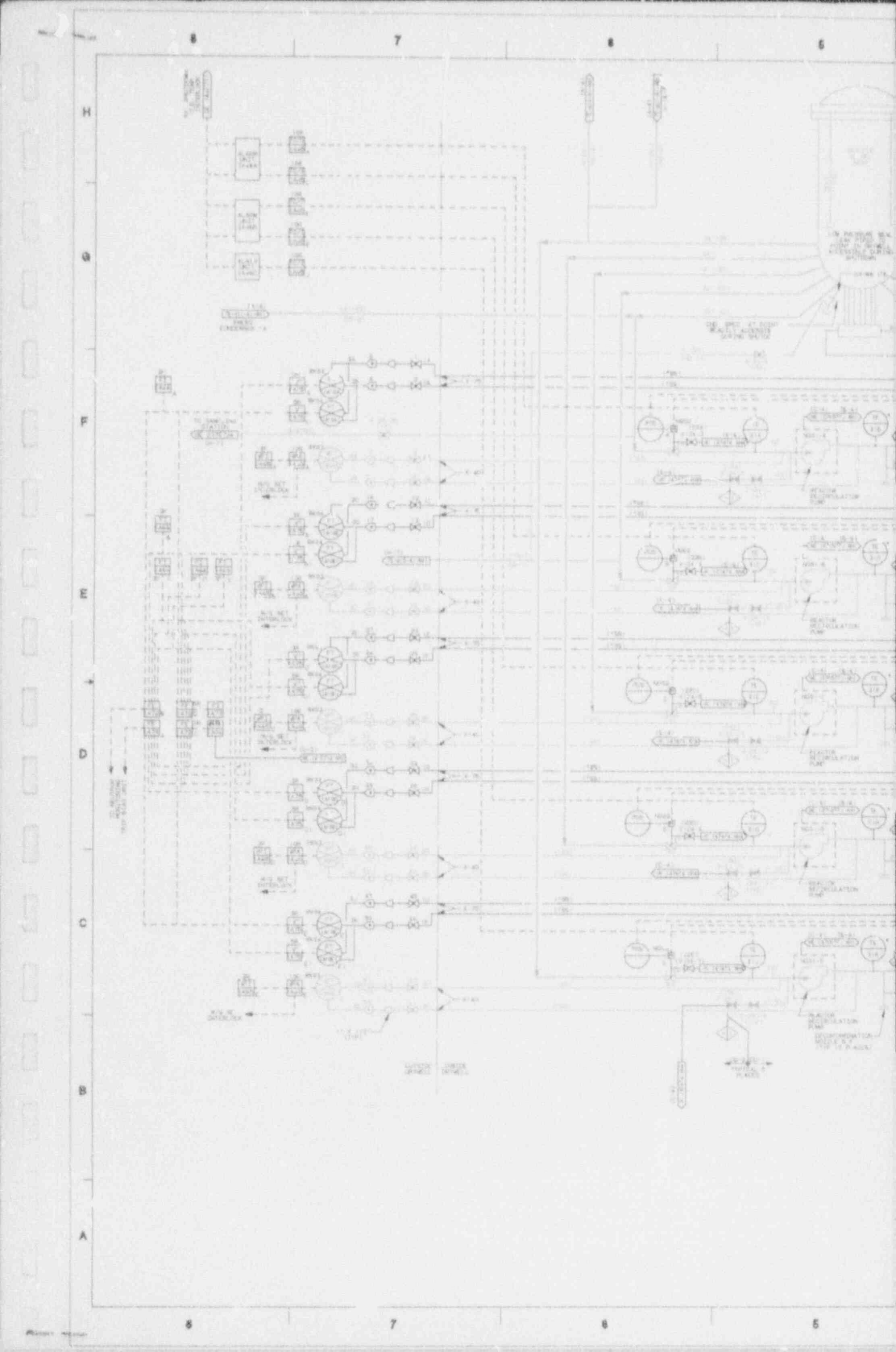
SYSTEM CHECK

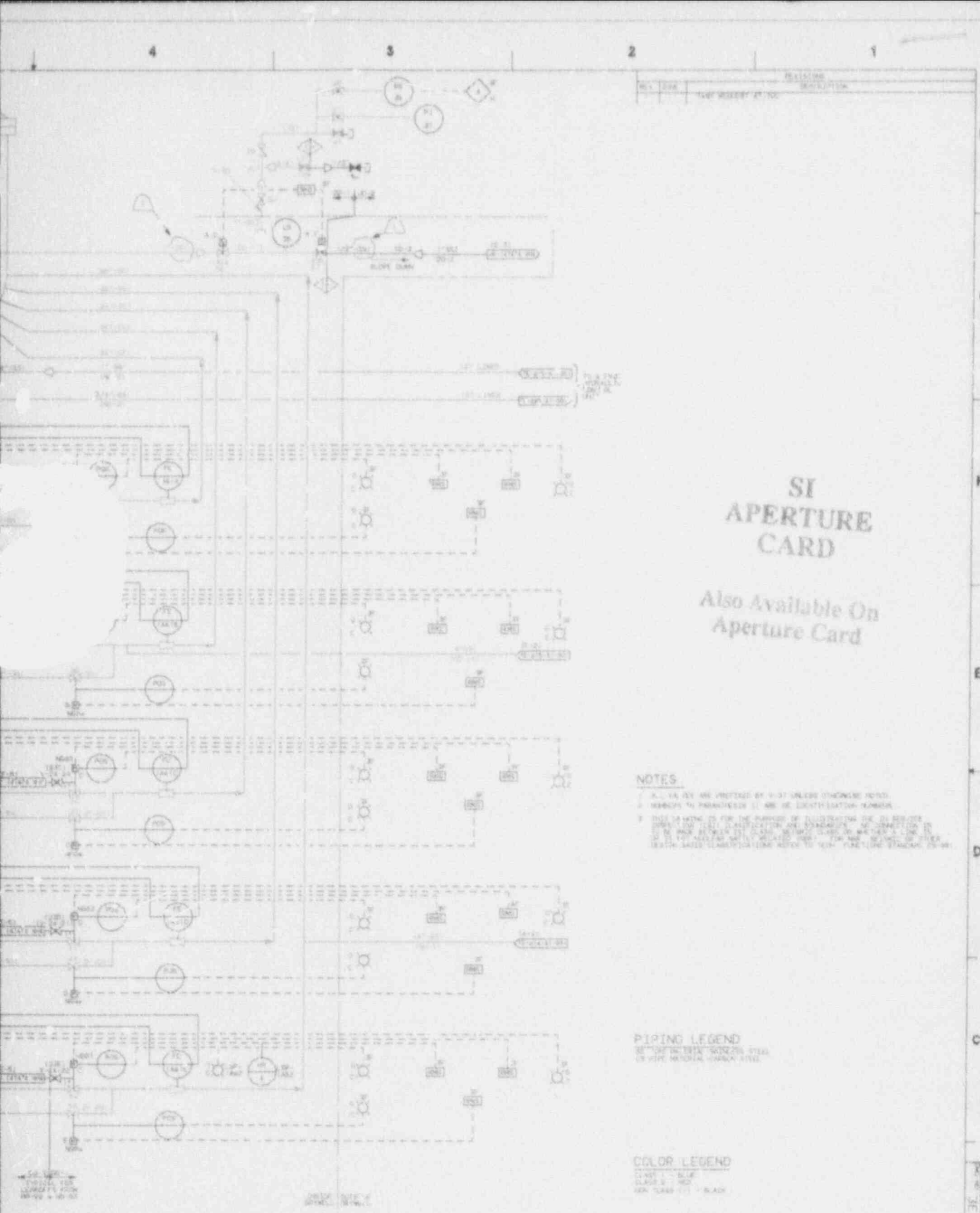
DWG NO 3E-216-A1-001

REV 1

SCL NONE

3E-216-A1-001





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Also Available On
Aperture Card

NOTES

PIPING LEGEND

COLOR LEGEND

Nuclear

RECIRCULATION SYSTEM

P&ID BOUNDARY DRAWING

3E-223-A1-001

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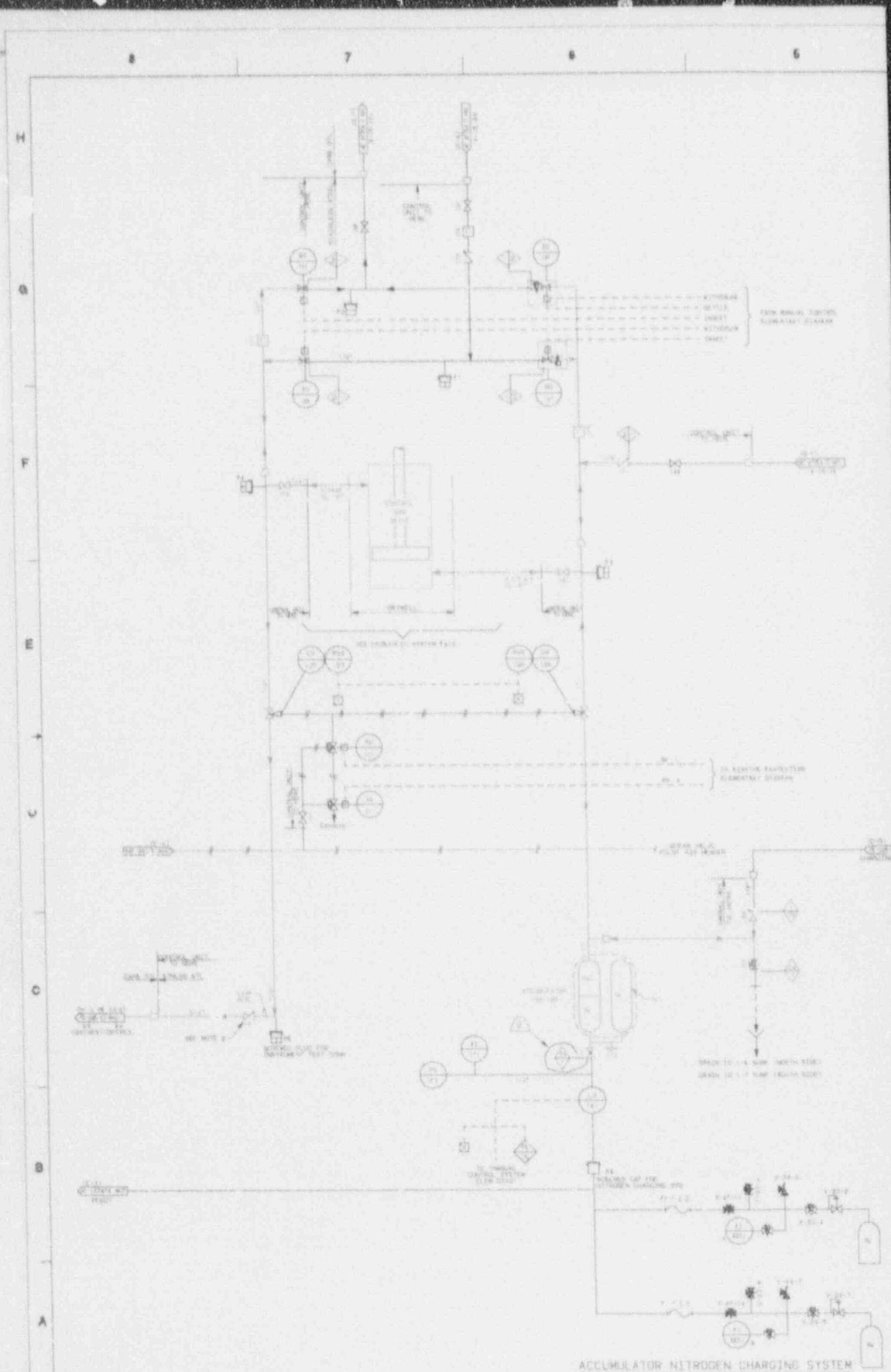
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ACCUMULATOR NITROGEN CHARGING SYSTEM

REVISIONS		
REV	ZONE	DESCRIPTION
[illegible]		[illegible]

ELECTRICAL CONNECTIONS			
DESCRIPTION	IDENTITY	FUNCTION	ACTION
LEAK DETECTOR	[illegible]	ALARM, CONTROL ROOM	[illegible] LIQUID LEVEL
PRESSURE SWITCH	[illegible]	ALARM, CONTROL ROOM	[illegible] CONTACTS OPEN ON DECREASING PRESSURE
SOLENOID VALVES	[illegible]	DIRECTION CONTROL/WITHDRAW	—
SOLENOID VALVES	[illegible]	DIRECTION CONTROL/INSERT	—
SCRAM VALVE PILOT SOLENOID	[illegible]	SCRAM	—
SCRAM VALVE POSITION SWITCH	[illegible]	POSITION INDICATOR/CONTROL ROOM	CONTACTS CLOSE WHEN VALVE IS OPEN
LEAK DETECTOR LIGHT	[illegible]	INDICATOR, LOCAL	—
PRESSURE SWITCH LIGHT	[illegible]	INDICATOR, LOCAL	—

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APERTURE
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Aperture Card

NOTES

1. ALL VALVES AND INSTRUMENTS WILL BE IDENTIFIED AND LISTED WITH [illegible] AS A SYSTEM IDENTIFIER, UNLESS OTHERWISE NOTED. (EXAMPLE [illegible])
2. DURING CLASS 2 HYDRO, [illegible] VALVE SHALL BE OPEN TO PRESSURE [illegible]
3. THIS DRAWING IS FOR THE PURPOSE OF ILLUSTRATING THE IN-SERVICE INSPECTION (ISI) CLASSIFICATION AND BOUNDARIES. [illegible]
4. NUMBERS IN PARENTHESIS ( ) ARE [illegible] IDENTIFICATION NUMBERS

LEGEND

- STOP CHECK VALVE
- FILTER ELEMENT
- SOLENOID OPERATED VALVE W/ BUILT IN FLOW CONTROL
- SCREWED CAP FOR NITROGEN CHARGING [illegible]
- SCREWED PLUG FOR INSTRUMENT TEST CONN.
- RUPTURE DISC

COLOR LEGEND

CLASS 2 - RED
NON CLASS 1-2 - BLACK

CAD FILE [illegible]
THIS IS A COMPUTER GENERATED DWG. DO NOT REVISE IT MANUALLY

THIS DRAWING SUPERSEDES [illegible]

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[illegible]	[illegible]	ELECTRICAL DIAGRAM
[illegible]	[illegible]	HYDRAULIC CONTROL UNIT [illegible]
[illegible]	[illegible]	MECHANICAL DRAWING INDEX
[illegible]	[illegible]	ABBREVIATIONS
[illegible]	[illegible]	MECHANICAL SYMBOLS

REFERENCES

DRAWN DATE
CHECKED DATE
DESIGN LEADER DATE
ENGINEER DATE
MANAGER APPROVAL DATE

GPU Nuclear

HYDRAULIC CONTROL UNIT

ISI BOUNDARY DRAWING

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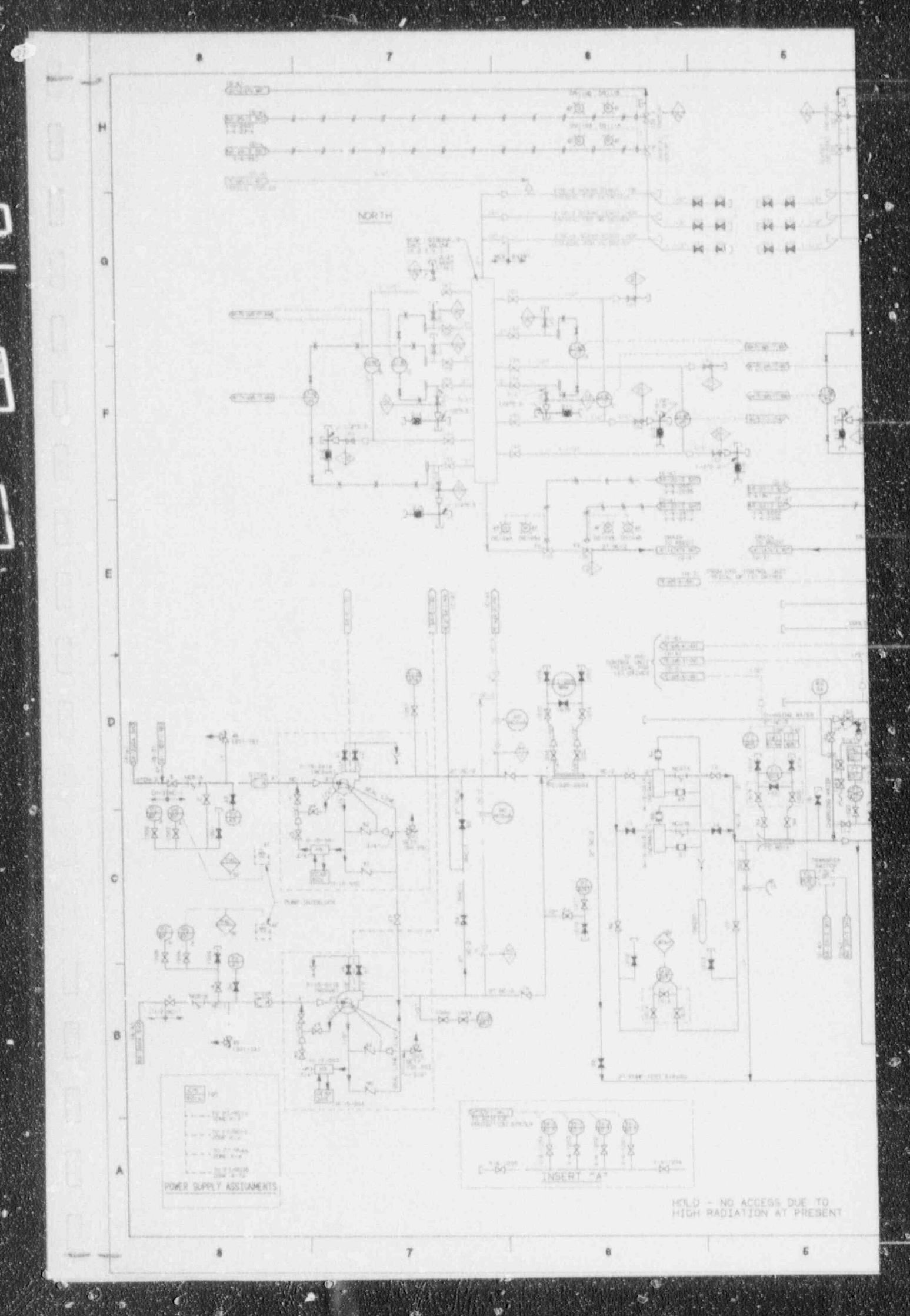
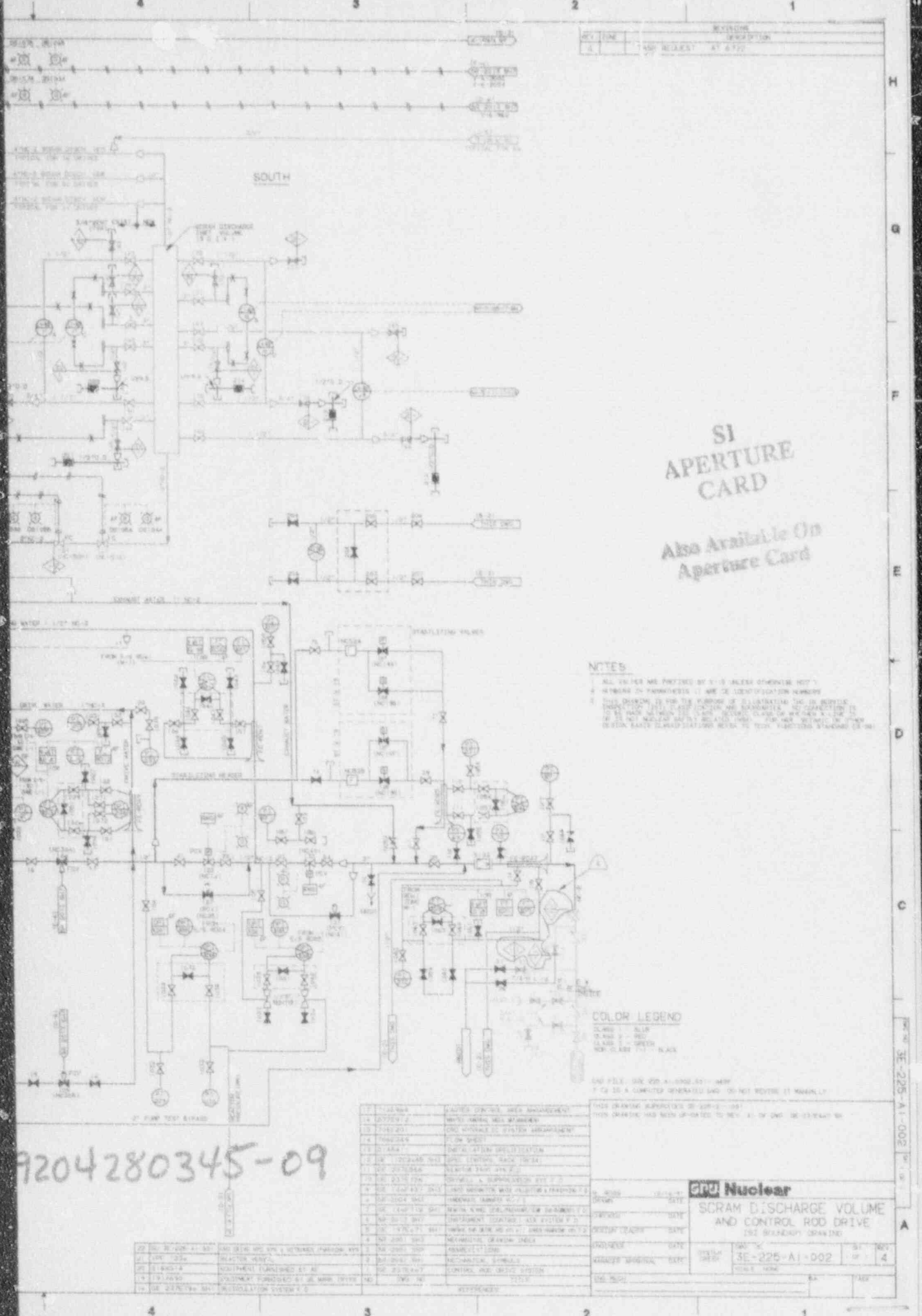

NORTH
POWER SUPPLY ASSIGNMENTS
INSERT "A"
HOLD - NO ACCESS DUE TO HIGH RADIATION AT PRESENT



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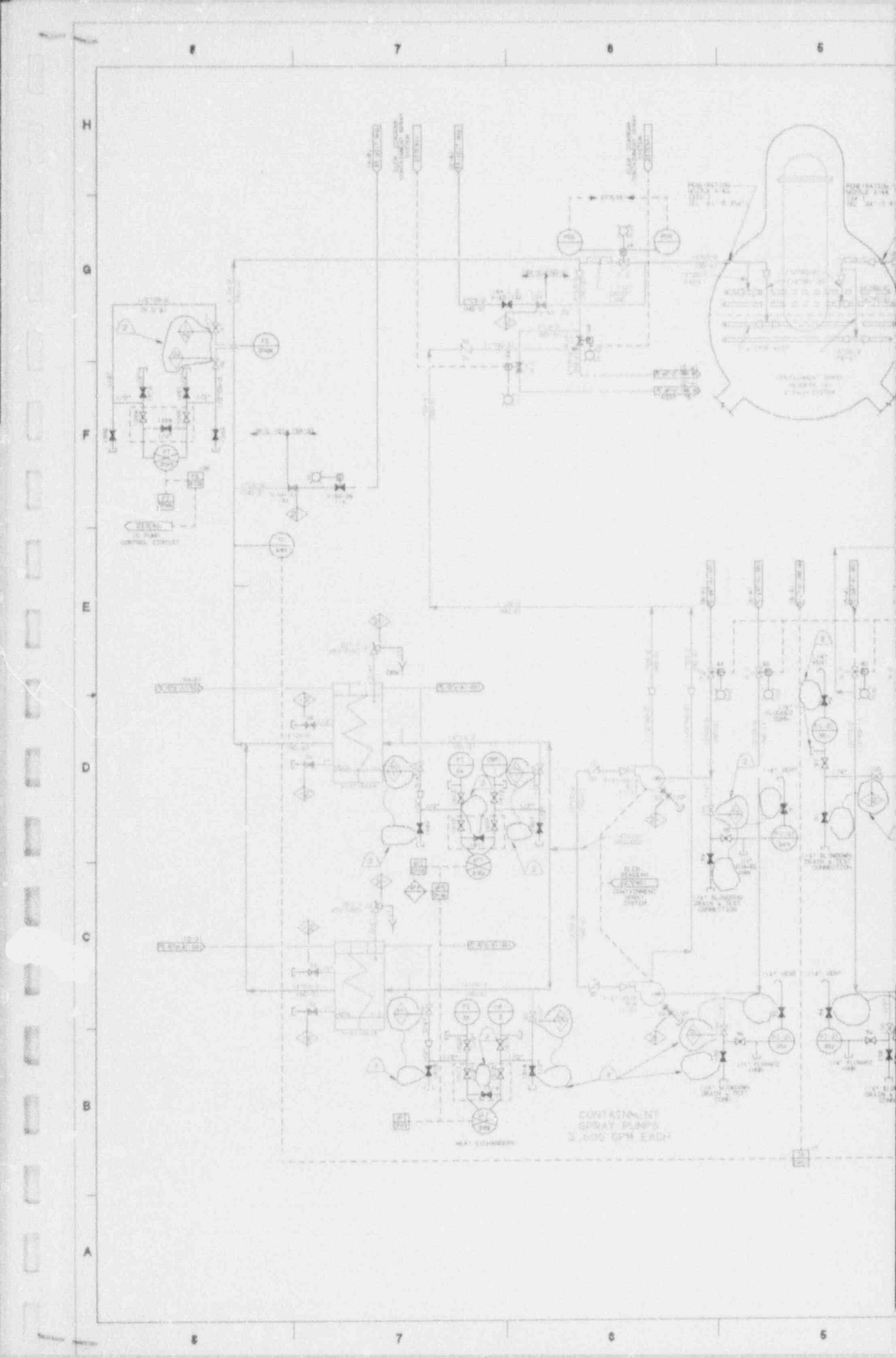
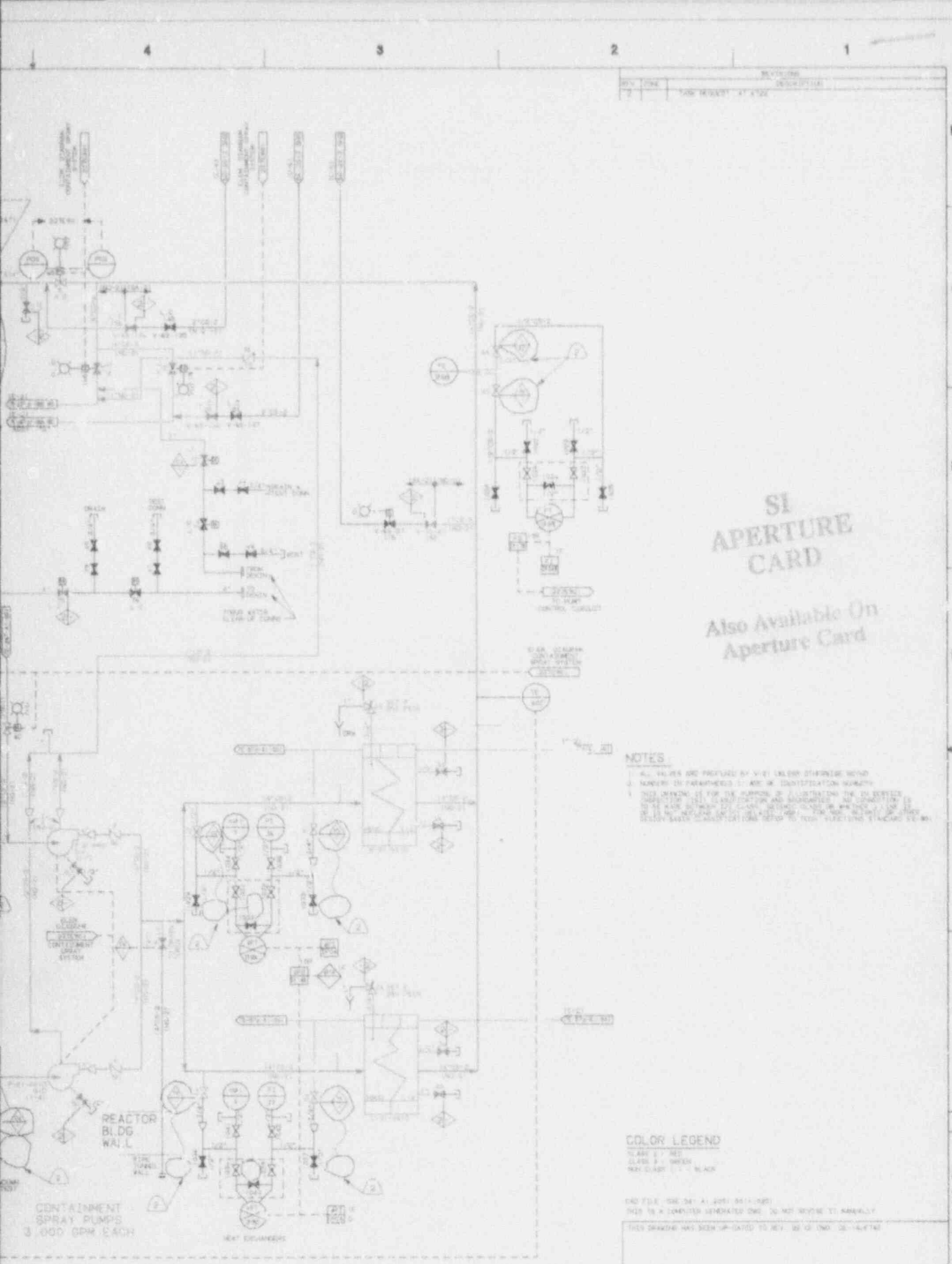

CONTAINMENT
SPRAY PUMPS
3,000 GPM EACH



NOTES:

COLOR LEGEND

9204280345-10

3	SE-24[illegible]	CONTAINMENT SPRAY SYSTEM
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5	SE-24[illegible]	[illegible]
6	SE-24[illegible]	[illegible]
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9	SE-24[illegible]	[illegible]
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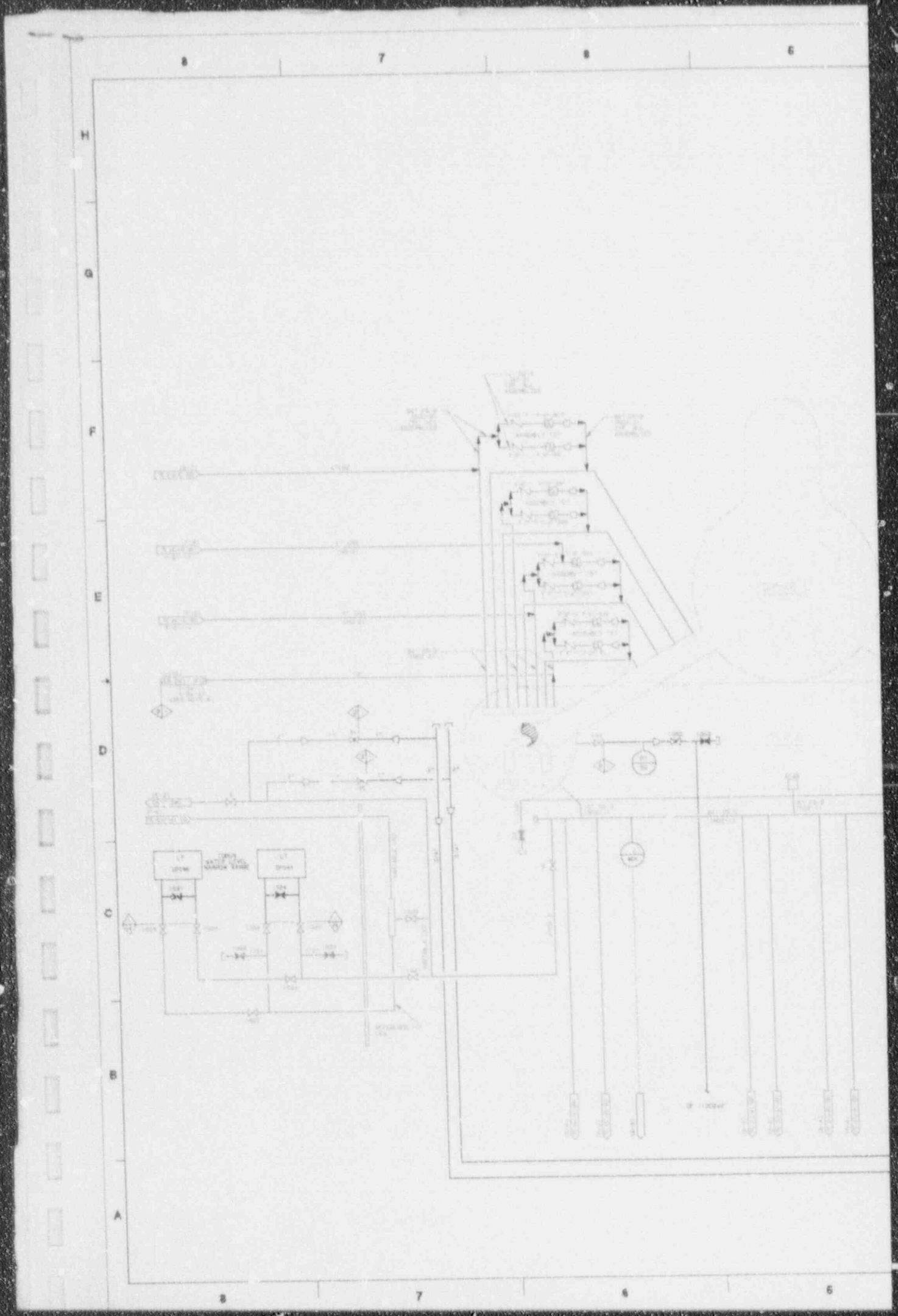
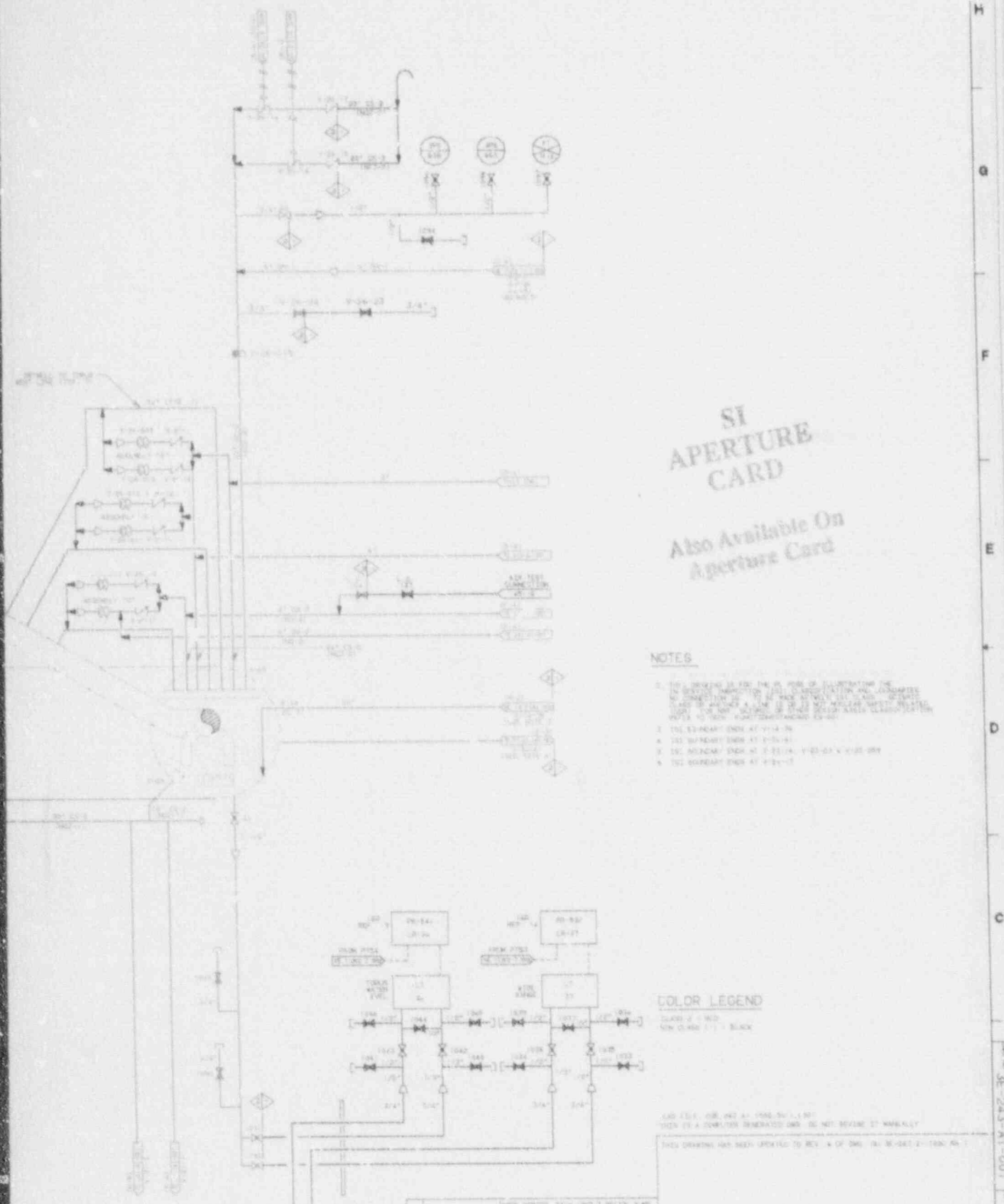
Nuclear

CONTAINMENT SPRAY SYS

(A) BOUNDARY DRAWING

SE-24[illegible]-A1-001 | REV 2





NOTES

COLOR LEGEND

GPU Nuclear

DRYWELL AND TORUS
VACUUM RELIEF SYSTEM
ISI BOUNDARY DRAWING

3E-243-A1-001

9204280345-11

OVERSIZE DOCUMENT PAGE PULLED

SEE APERTURE CARDS

NUMBER OF OVERSIZE PAGES FILMED ON APERTURE CARDS 1

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APERTURE CARD/HARD COPY AVAILABLE FROM

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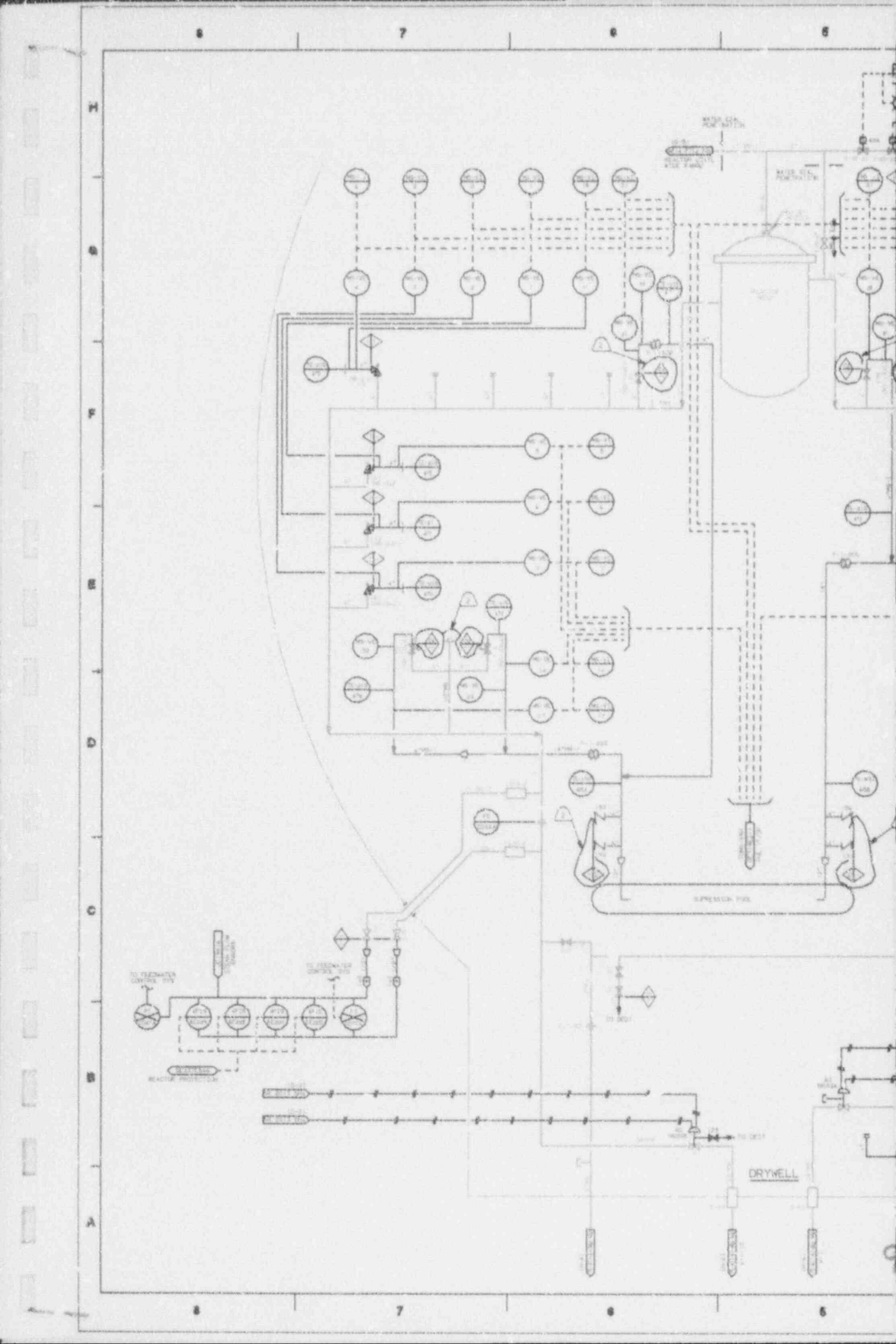
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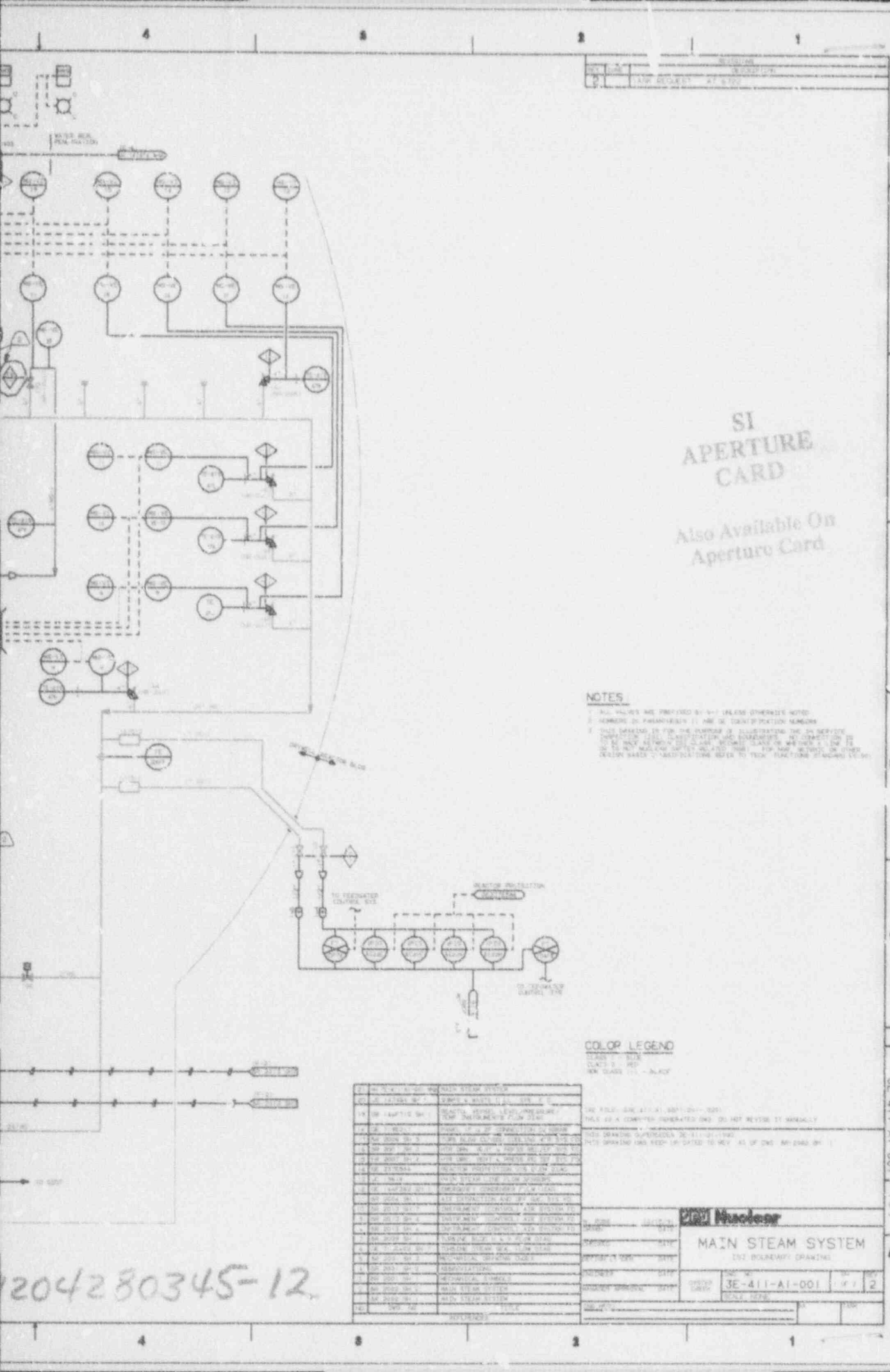

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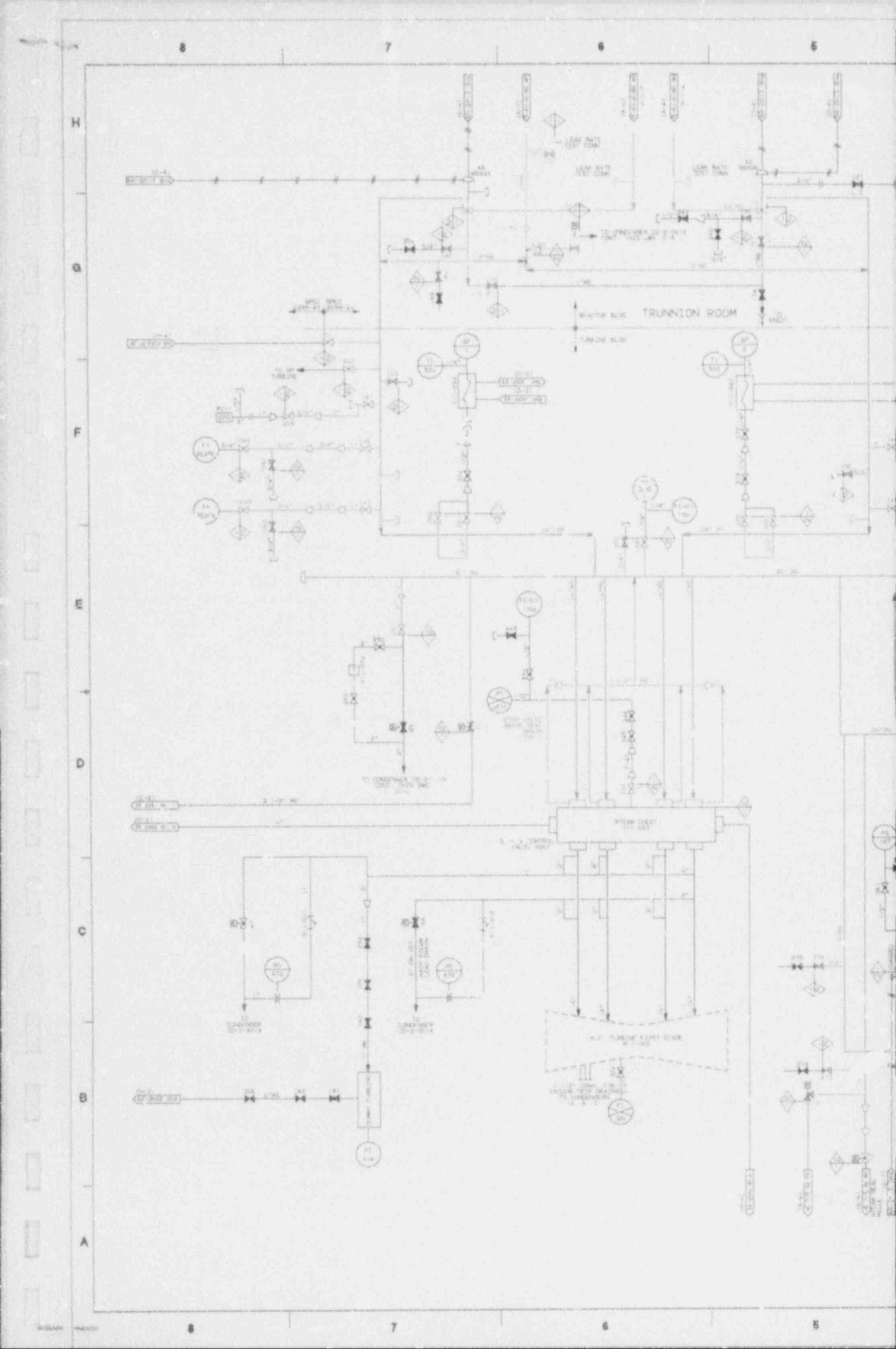
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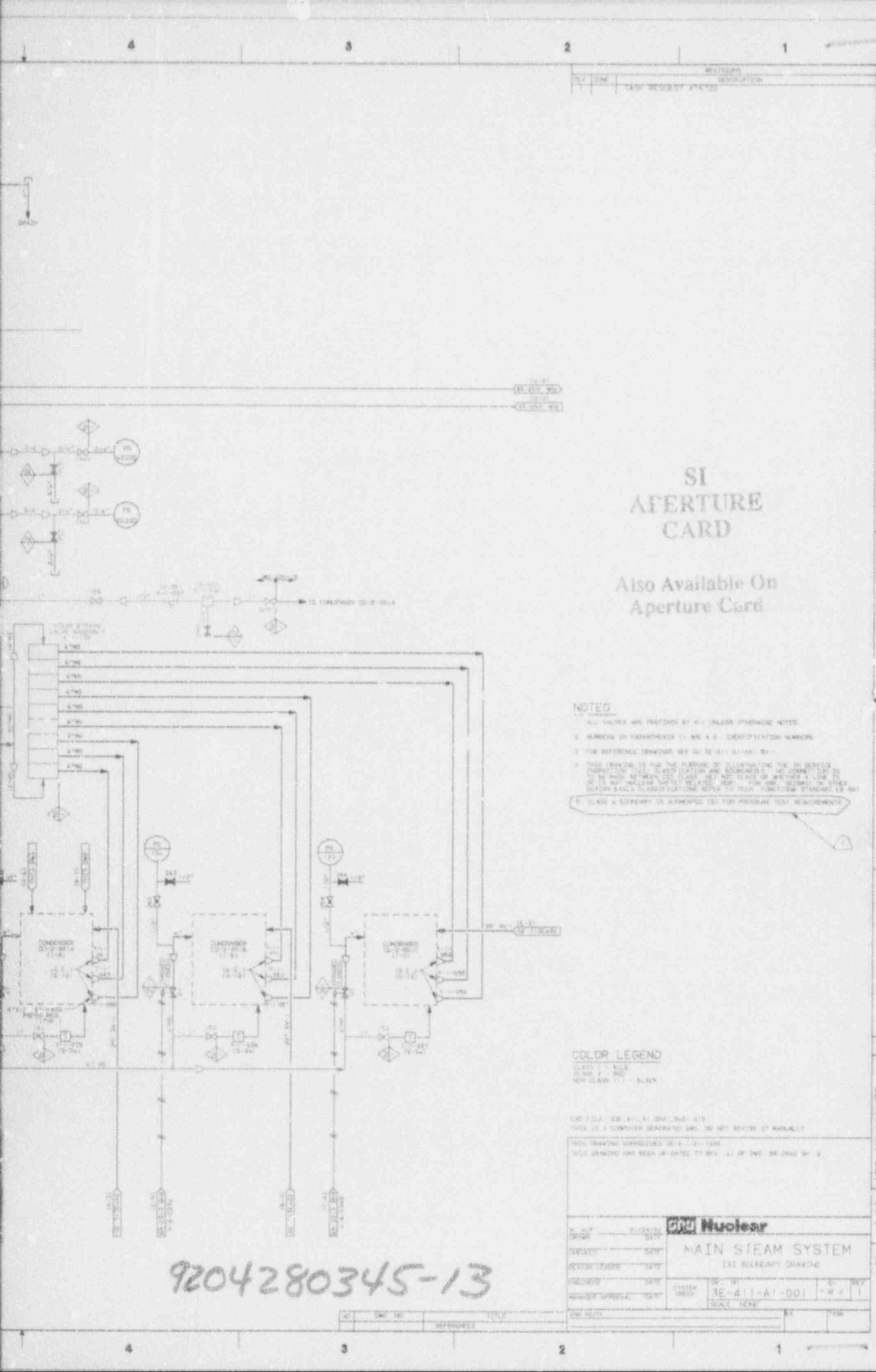

SI
APERTURE
CARD

Also Available On
Aperture Card

NOTES

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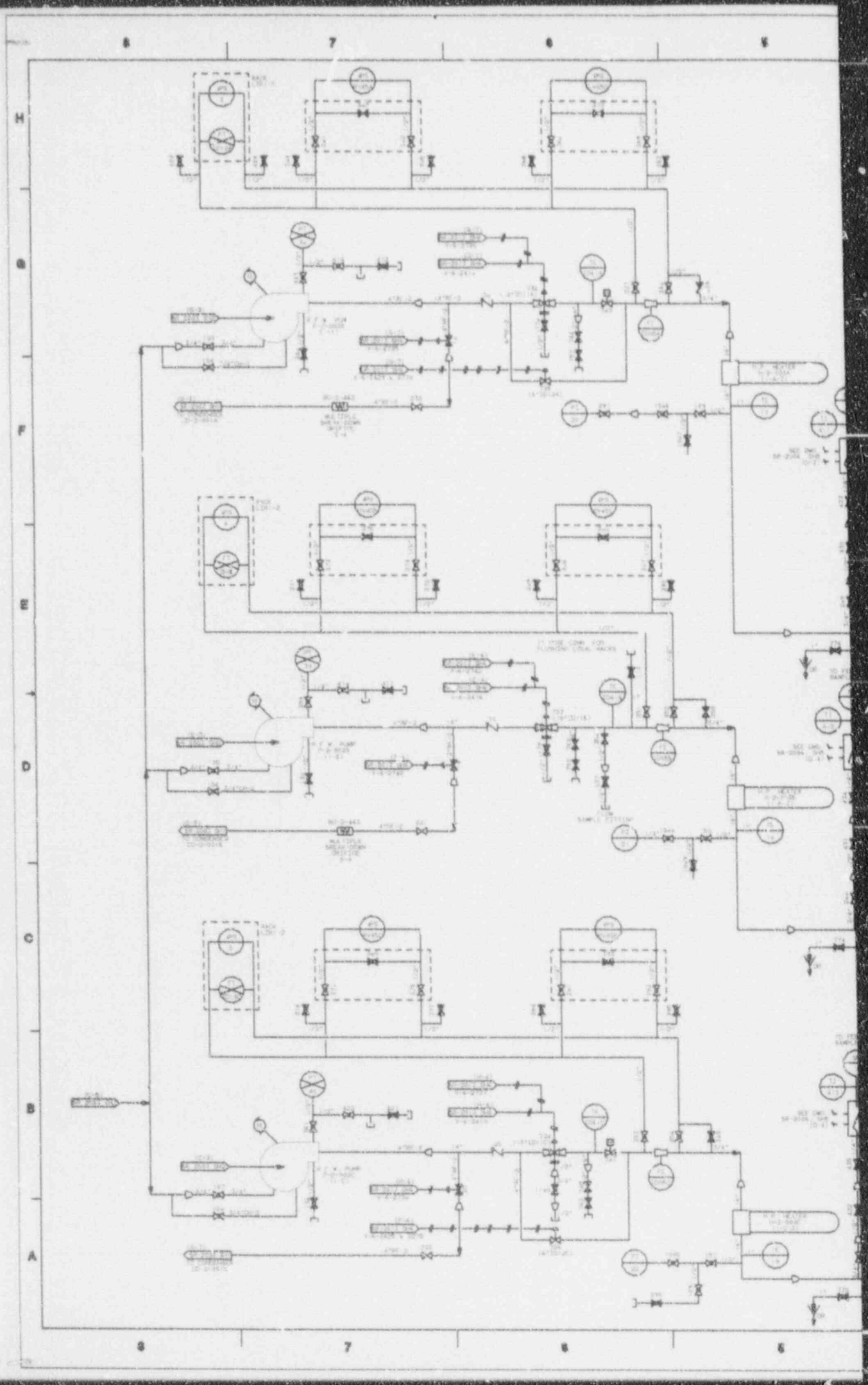
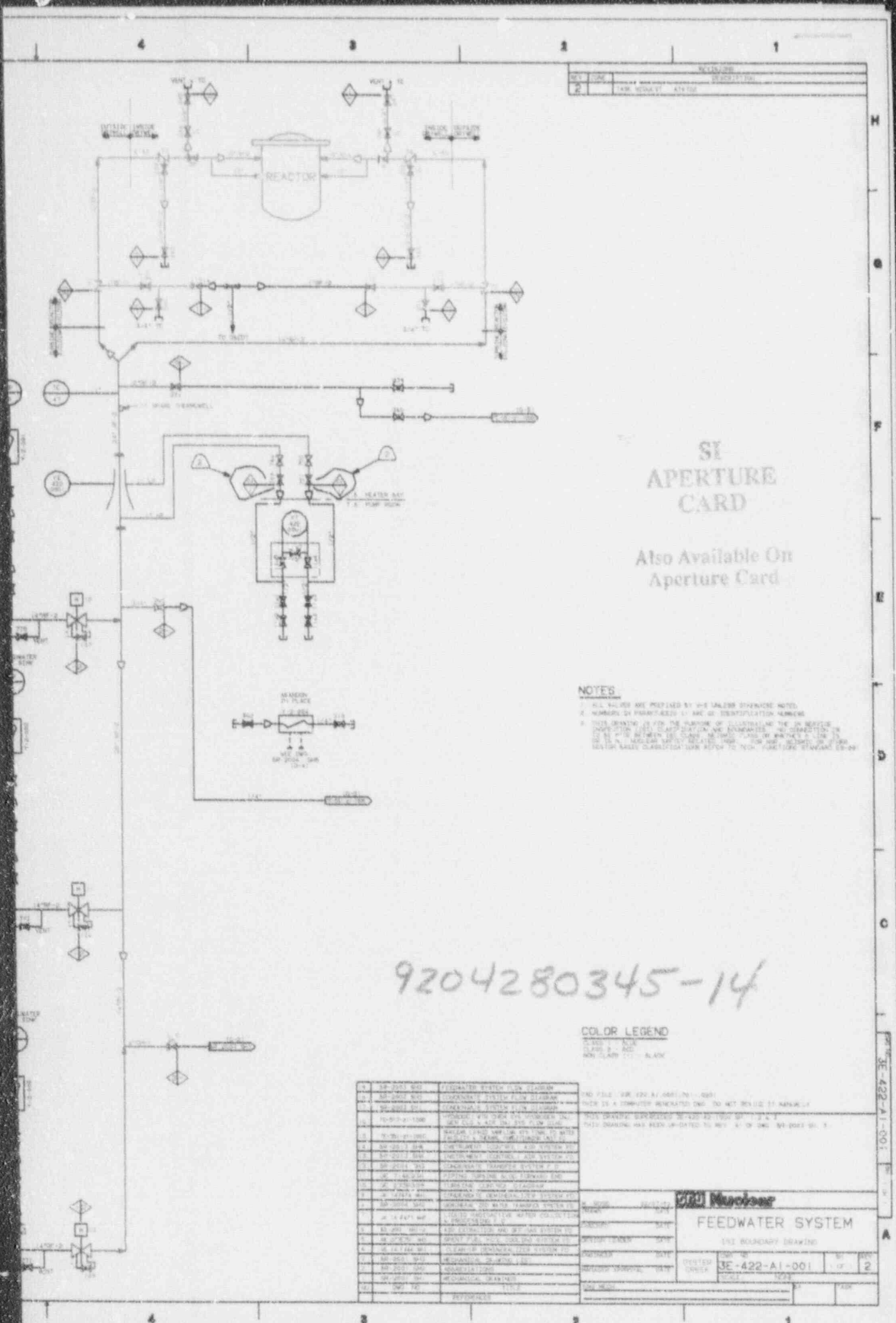
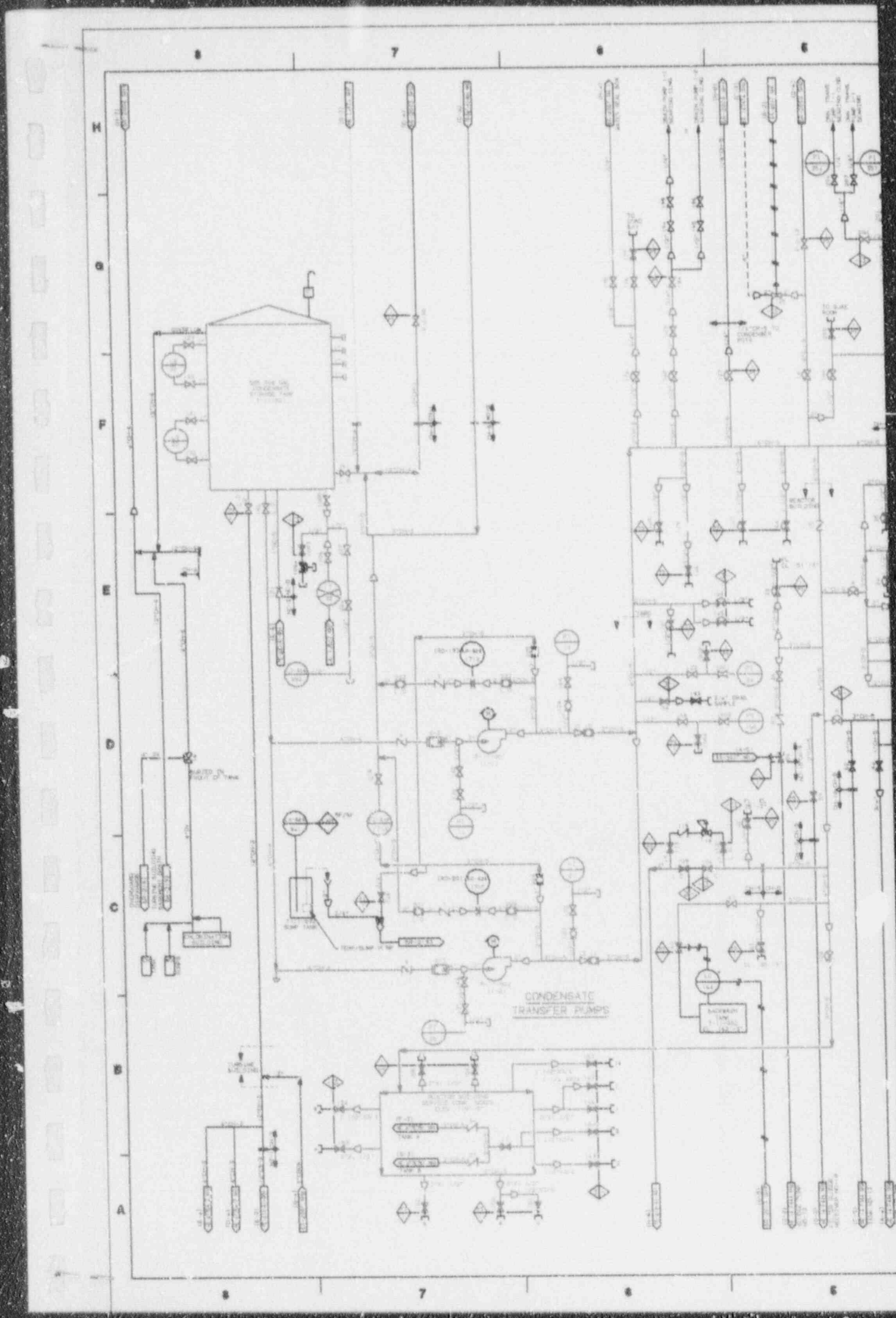
Nuclear

MAIN STEAM SYSTEM

3E-411-A1-001



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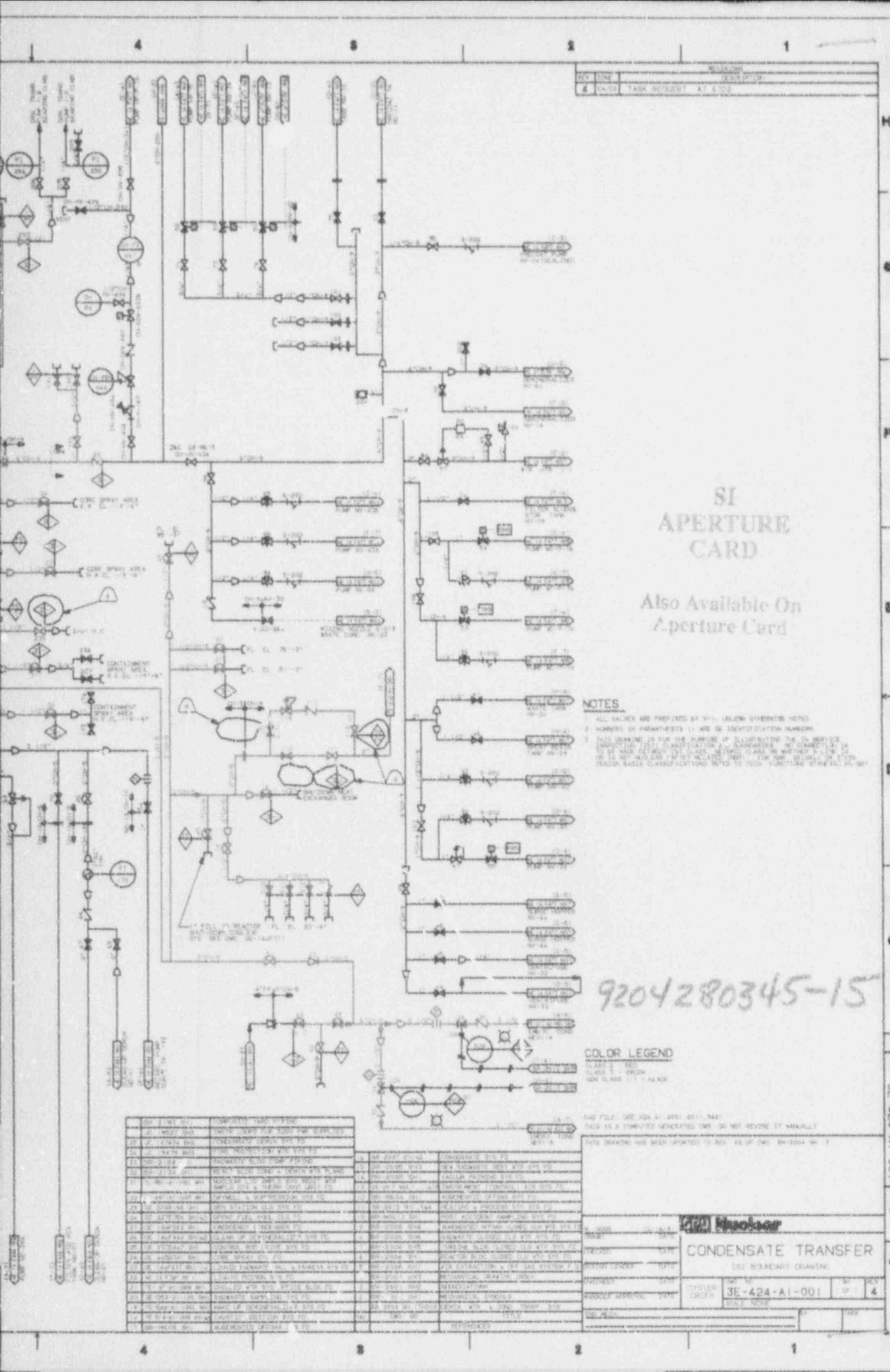
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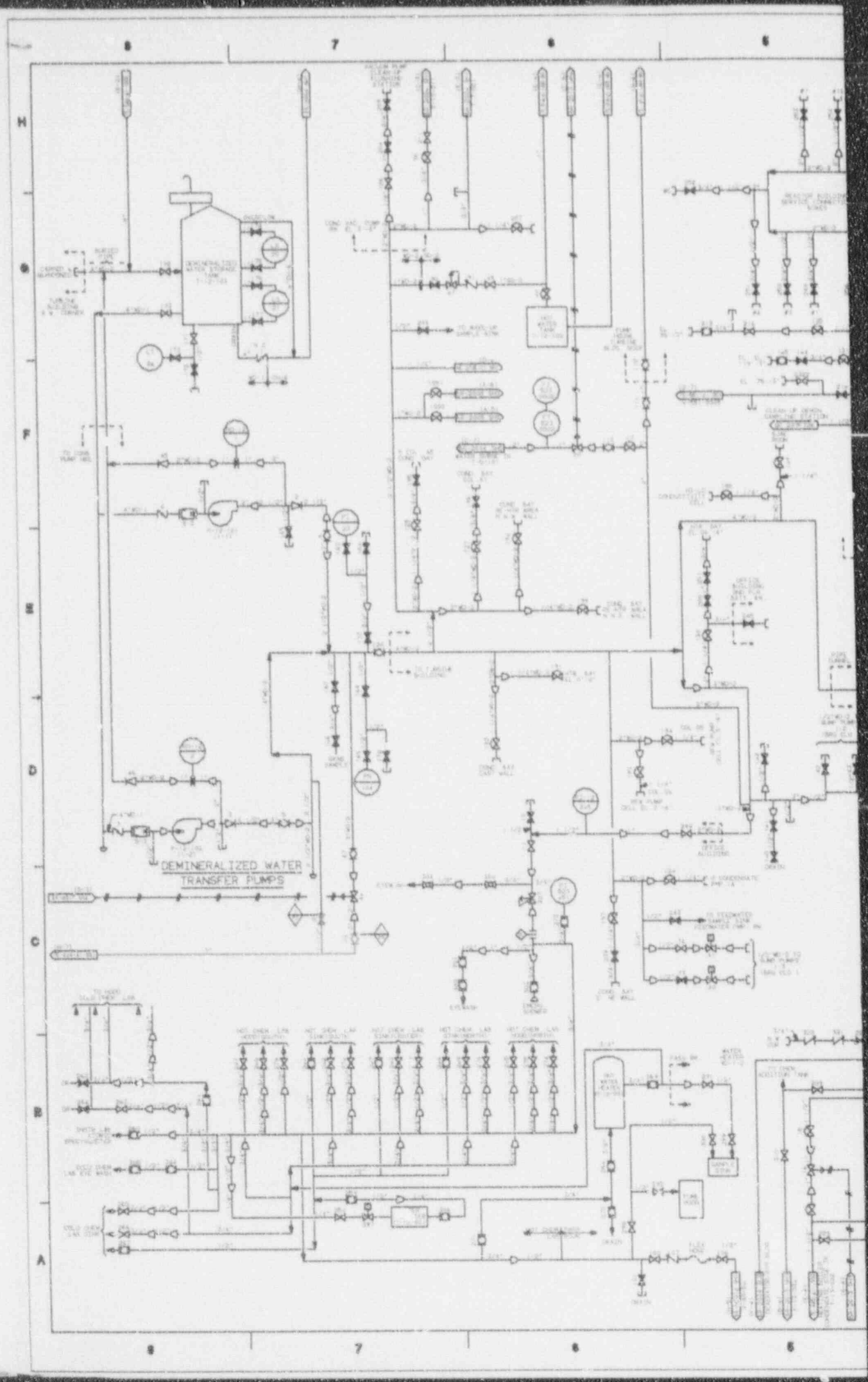
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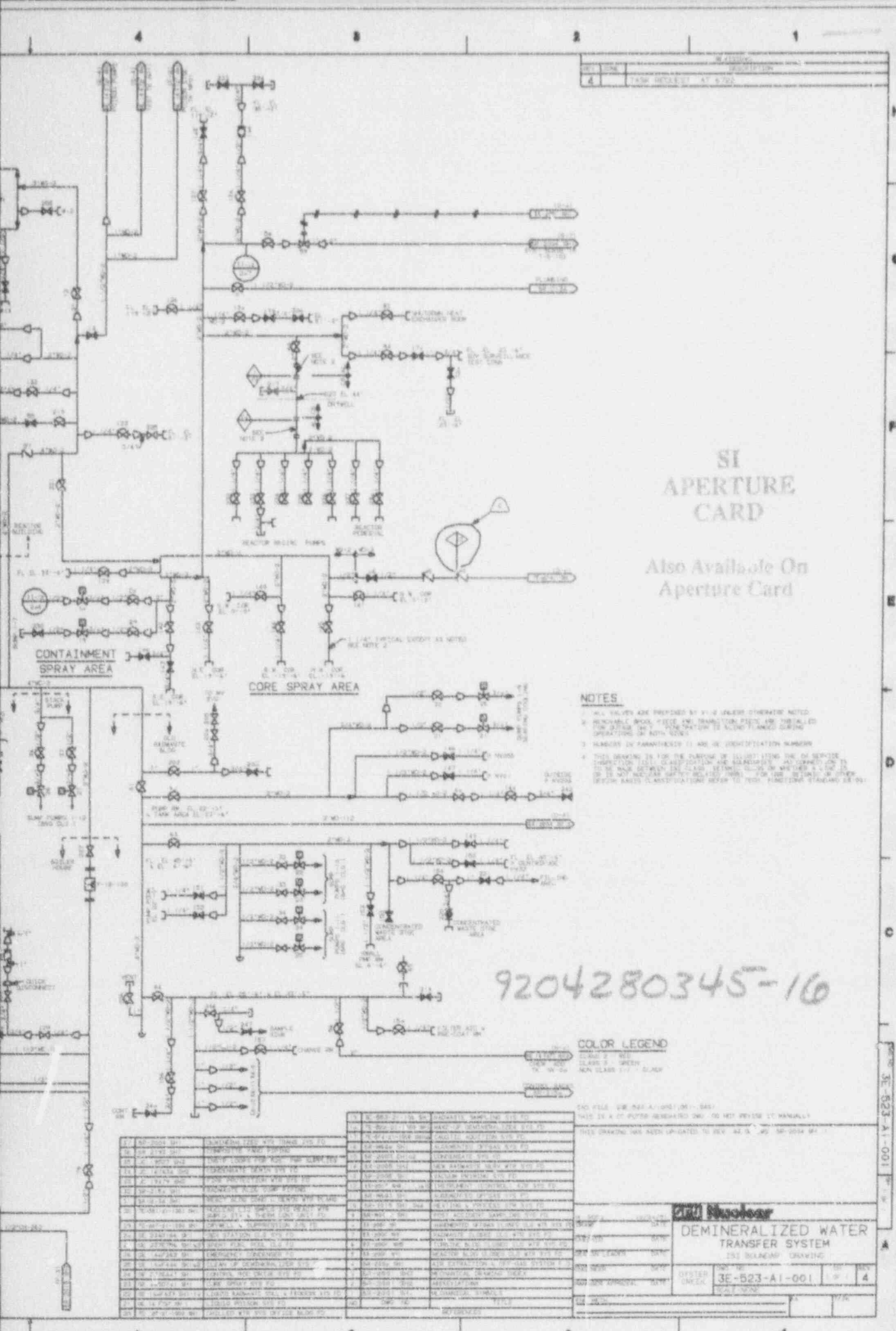

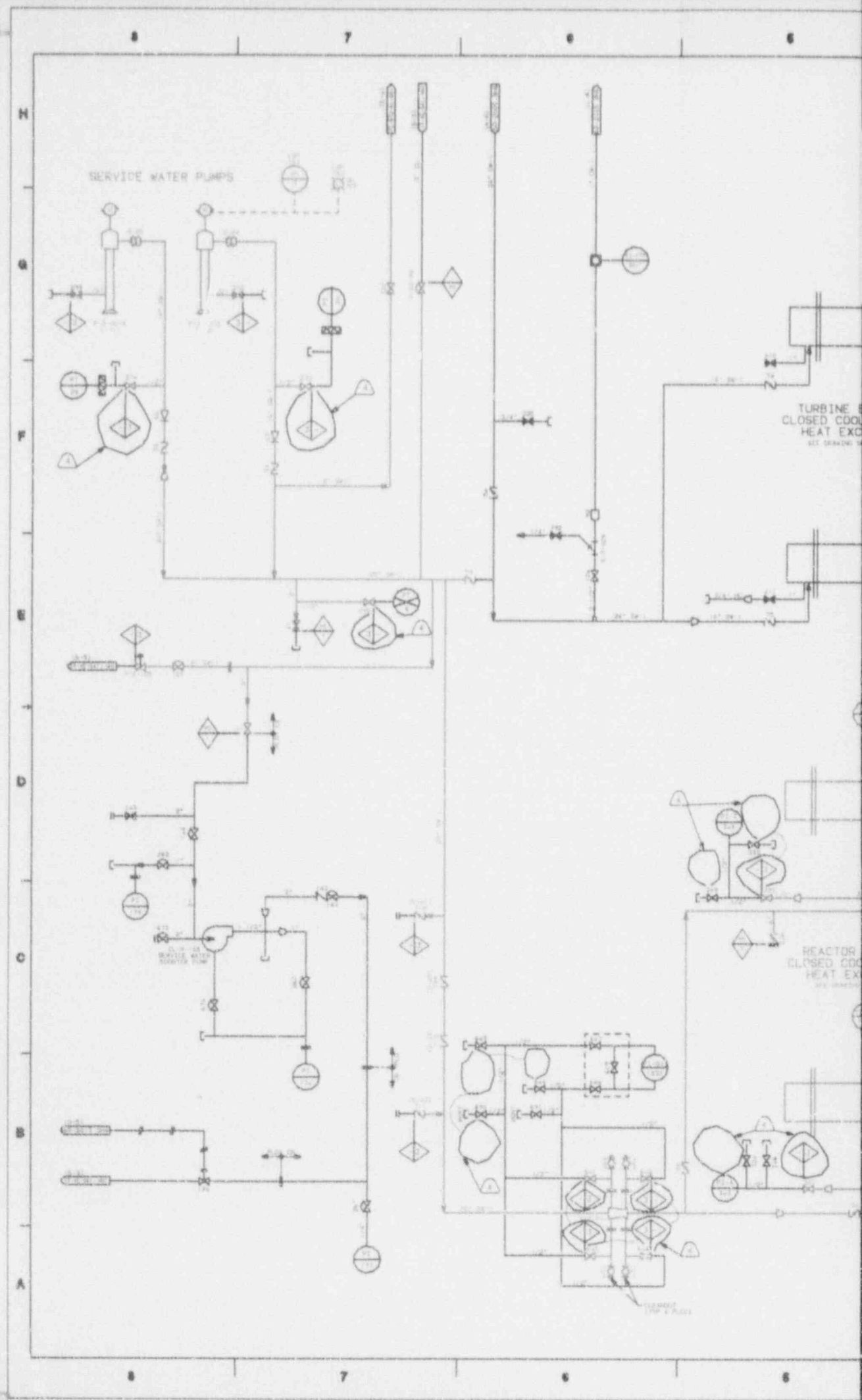
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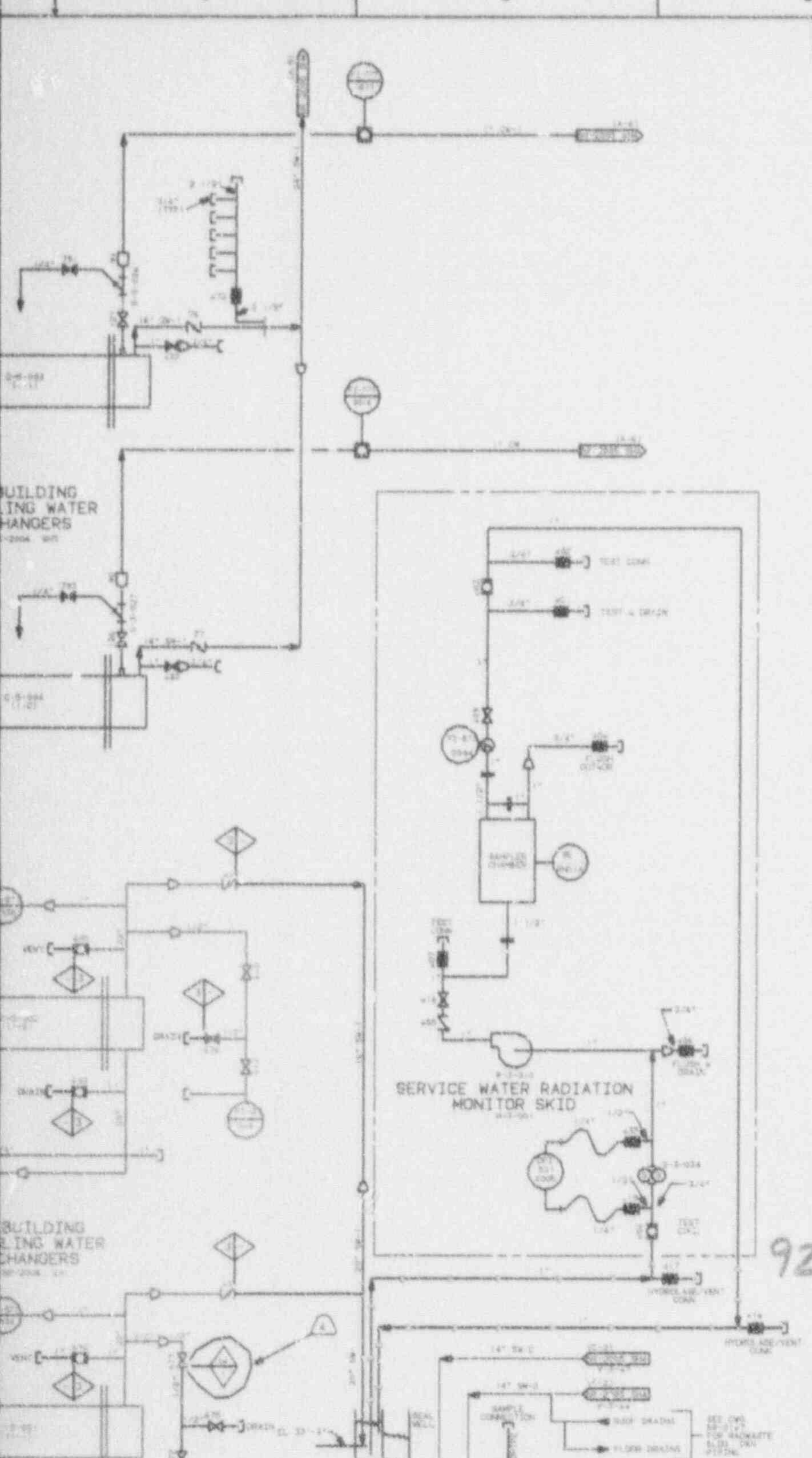
TURBINE
CLOSED COOL
HEAT EXC
REACTOR
CLOSED COO
HEAT EX

REV	CHK	DESCRIPTION
4		TASK REQUEST AT 4322



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NOTES

1. ALL VALVES ARE PREFIXED BY V-3 UNLESS OTHERWISE NOTED.
2. NUMBERS IN PARENTHESIS ( ) ARE ID IDENTIFICATION NUMBERS.
3. THIS DRAWING IS FOR THE PURPOSE OF ILLUSTRATING THE IN SERVICE INSPECTION (ISI) CLASSIFICATION AND BOUNDARIES. NO CONNECTION IS TO BE MADE BETWEEN ISI CLASS, SEISMIC CLASS OR WHETHER A LINE IS OR IS NOT NUCLEAR SAFETY RELATED. REFER ... FOR NSR, SEISMIC OR OTHER DESIGN BASIS CLASSIFICATIONS REFER TO TECH. FUNCTIONS STANDARD ...

COLOR LEGEND

CLASS 3 - GREEN
NON CLASS 1-3 - BLACK

CAD FILE ...
THIS IS A COMPUTER GENERATED DWG. DO NOT REVISE IT MANUALLY.

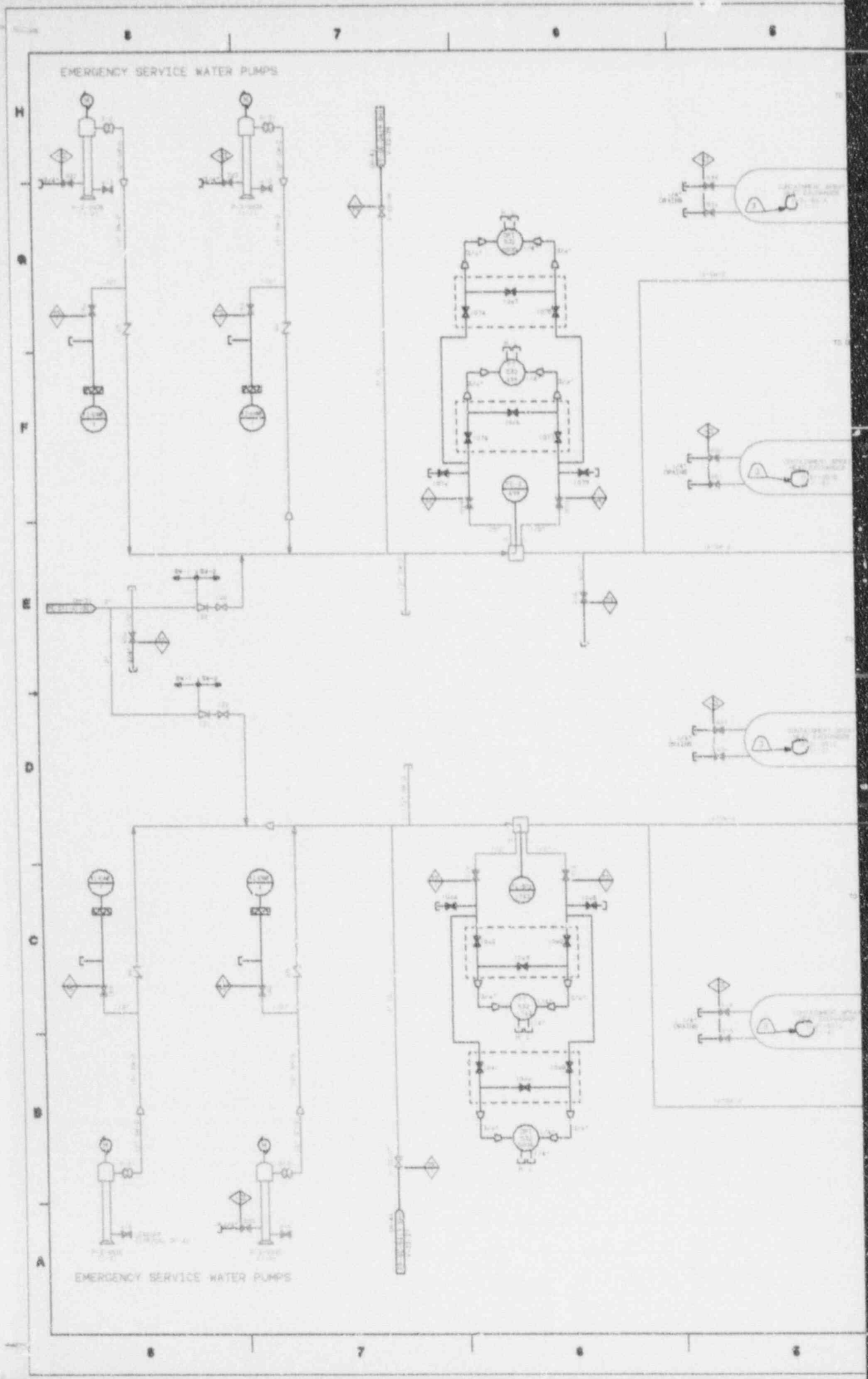
THIS DRAWING HAS BEEN UP-DATED TO REV. 40 OF DWG. BR-2000 SH. 2

NO.	DWG. NO.	TITLE	NO.	DWG. NO.	TITLE
			12	BR-2004 SH1	REACT. BLDG CLOSED COOLING WAT-FLOW DIAG
			11	BR-2004 SH3	TURB BLDG CLOSED COOLING WAT-FLOW DIAG
			10	[illegible]	[illegible] RADWASTE ... FLOW DIAG
20	3E-531-A1-001	EMERGENCY SERVICE WATER SYS	9	BR-2004 SH1	DEMIN WTR TRANS SYS-FLOW DIAG
19	BR 2005 SH2	REACT. & TURB BLDG SERVICE WATER SYS	8	[illegible]	FIRE PROTECTION WATER SYS-FLOW DIAG
18	BR 2187	RADWASTE BLDG FL & BASE ... PLAN SECTIONS & DETAILS	7	[illegible]	NEW RADWASTE DEPT WAT SYS-FLOW DIAG
			6	[illegible]	CONTAINMENT SPRAY SYSTEM-FLOW DIAG
17	BR 2192	RADWASTE YARD PIPING	5	BR-2011 SH4	INST (CONTROL) AIR SYS-FLOW DIAG
16	[illegible]	TURB BLDG LOCAL INSTR RACK ...	4	[illegible]	CHLORINATION SYSTEM-FLOW DIAG
15	BR 2004 SH3	DEMIN WTR TRANS SYS-FLOW DIAG	3	BR-2001 SH2	MECHANICAL DRAWING INDEX
14	BR 2004 SH4	TURB BLDG CLOSED COOLING WAT SYS-FLOW DIAG	2	BR-2001 SH3	ABBREVIATIONS
13	[illegible]	SUMPS & WASTE COLLECTION SYS-FLOW DIAG	1	BR-2001 SH1	MECHANICAL SYMBOLS
NO.	DWG. NO.	TITLE	NO.	DWG. NO.	TITLE

REFERENCES

DRAWN	DATE	GPU Nuclear
CHECKED	DATE	SERVICE WATER SYSTEM
DESIGN LEADER	DATE	ISI BOUNDARY DRAWING
ENGINEER	DATE	OYSTER CREEK — DWG. NO. 3E-531-A1-001 — SH 1 OF 1 — REV 4
MANAGER APPROVAL	DATE	SCALE: NONE

3E-531-A1-001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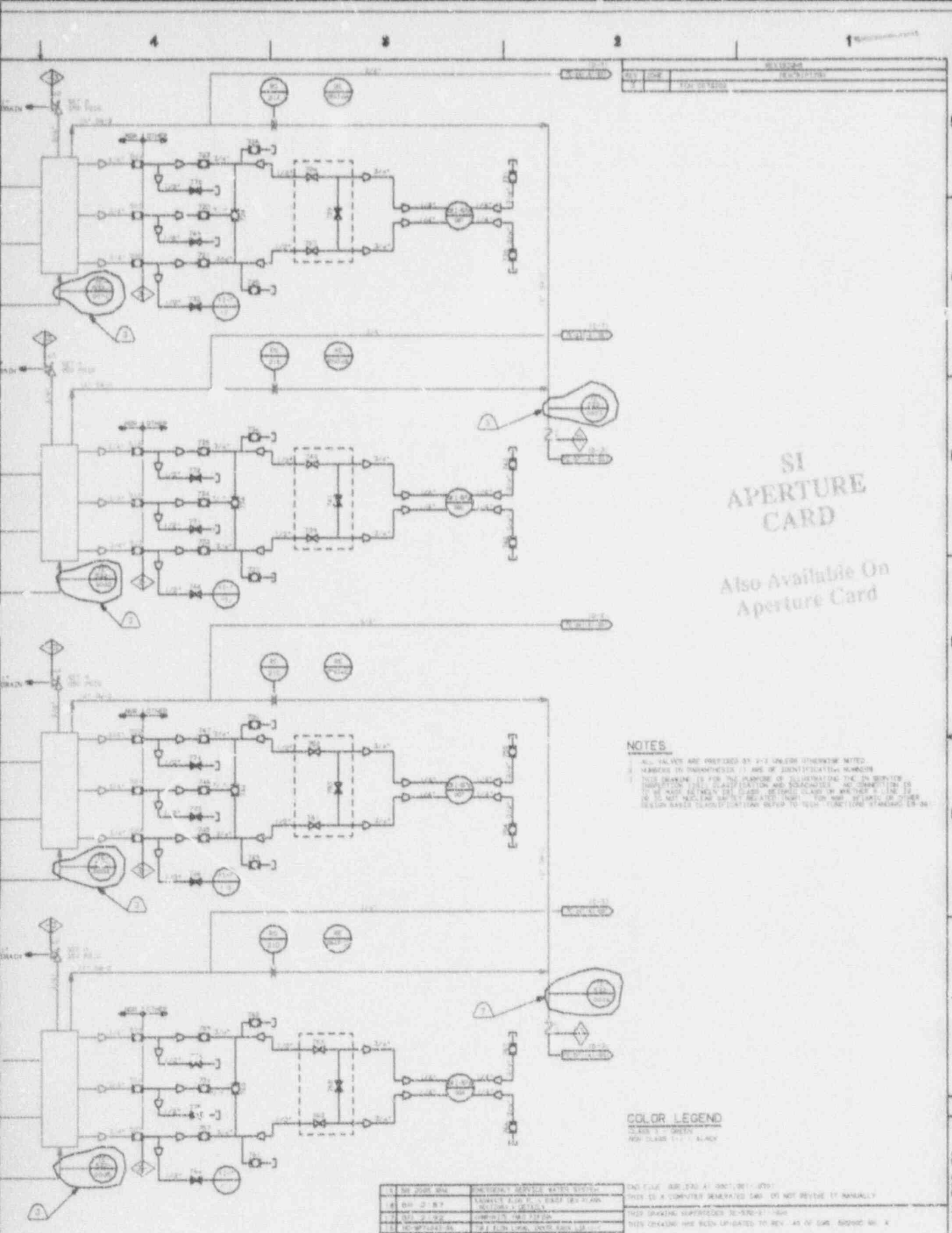
EMERGENCY SERVICE WATER PUMPS



NOTES

COLOR LEGEND

GPU Nuclear

EMERGENCY SERVICE
WATER SYSTEM
1ST BOUNDARY DRAWING

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DRAWING NO.: 3E-532-A1-001
SHEET NO.: 3
REV NO.: 0

3E-532-A1-001

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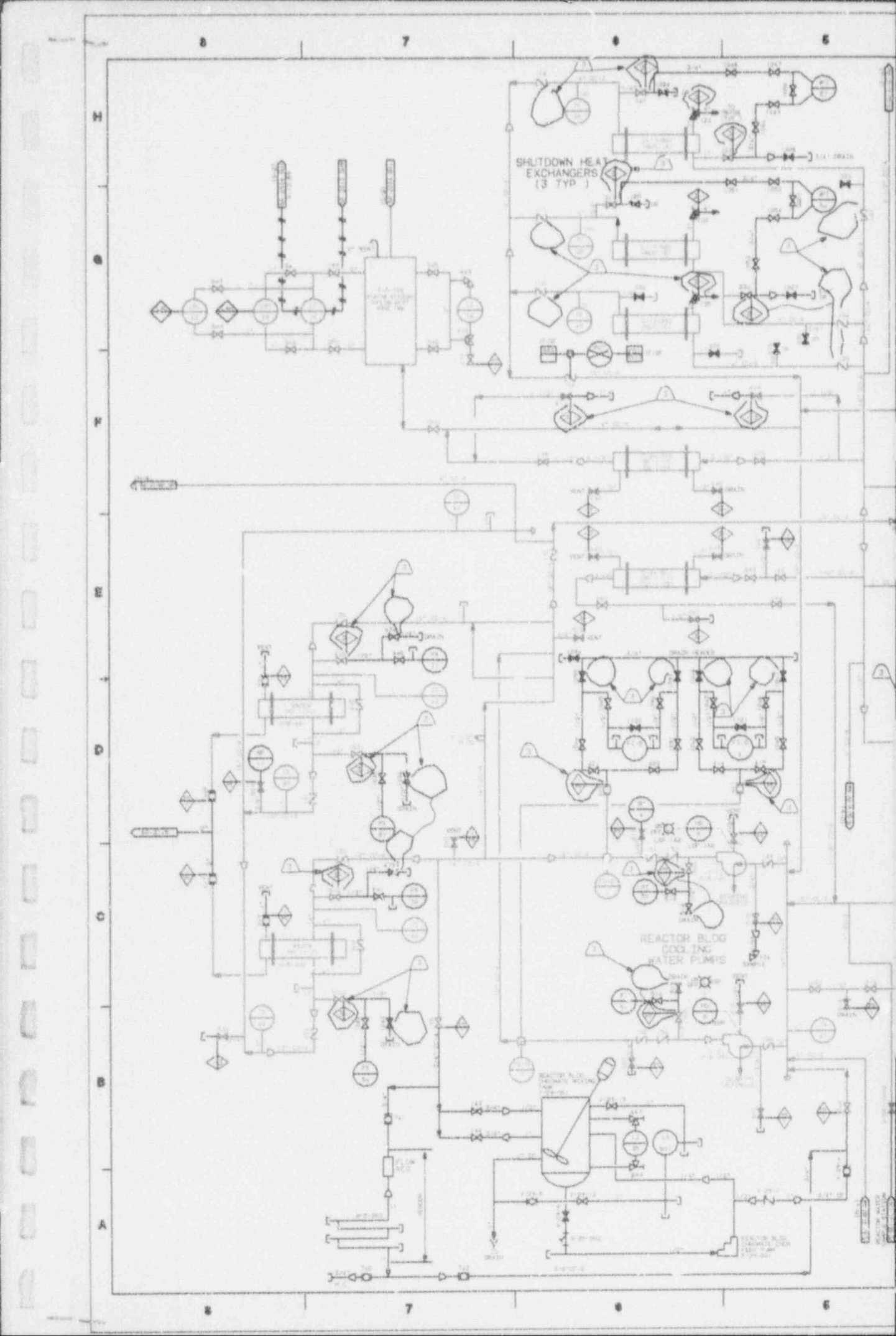
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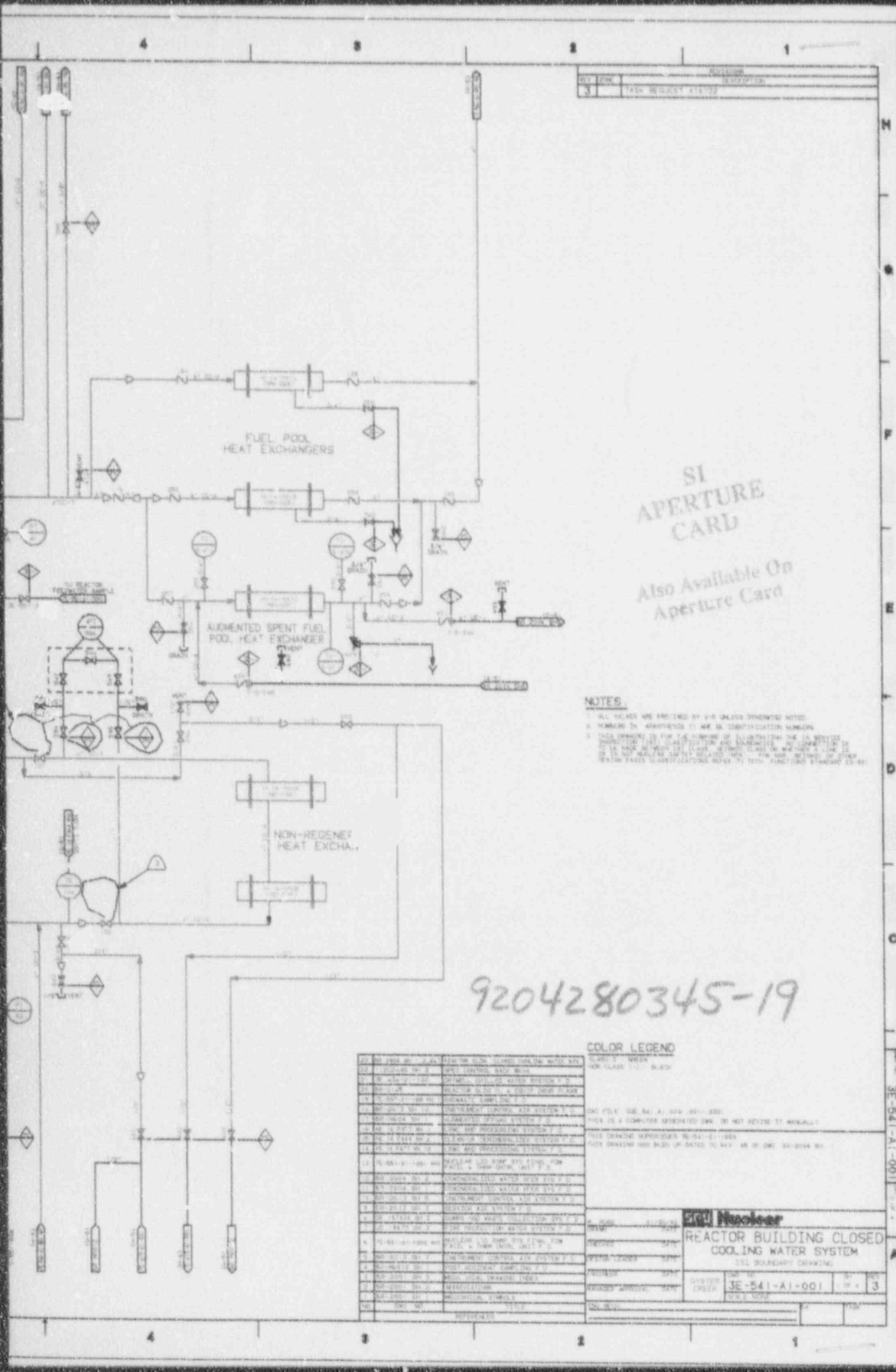
REACTOR BLDG COOLING WATER PUMPS


FUEL POOL
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AUGMENTED SPENT FUEL
POOL HEAT EXCHANGER
NON-REGENEF
HEAT EXCHA.
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NOTES.
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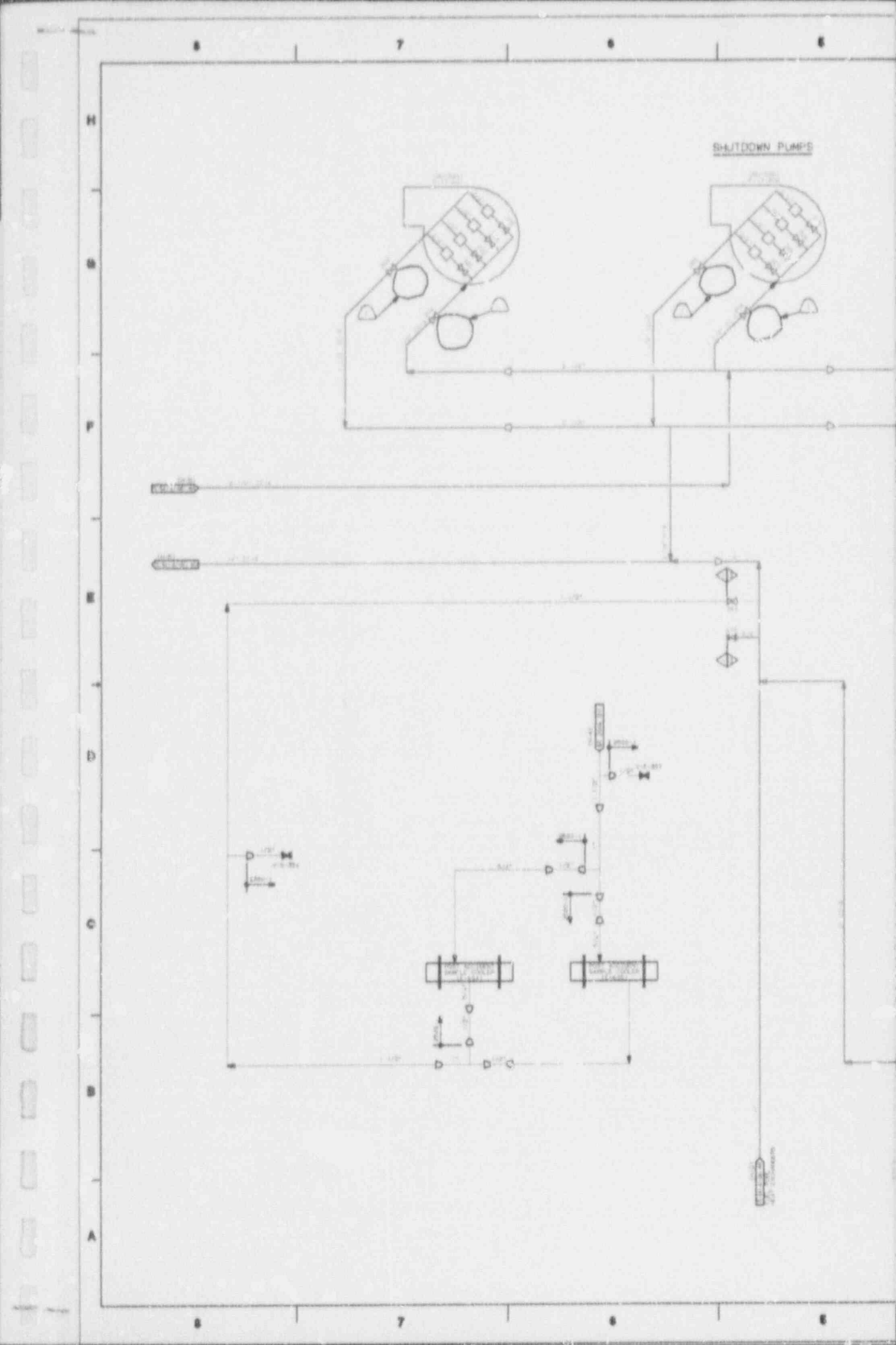
COLOR LEGEND
GPU Nuclear
REACTOR BUILDING CLOSED
COOLING WATER SYSTEM
ISI BOUNDARY DRAWING
OYSTER CREEK
3E-541-A1-001
3
TASK REQUEST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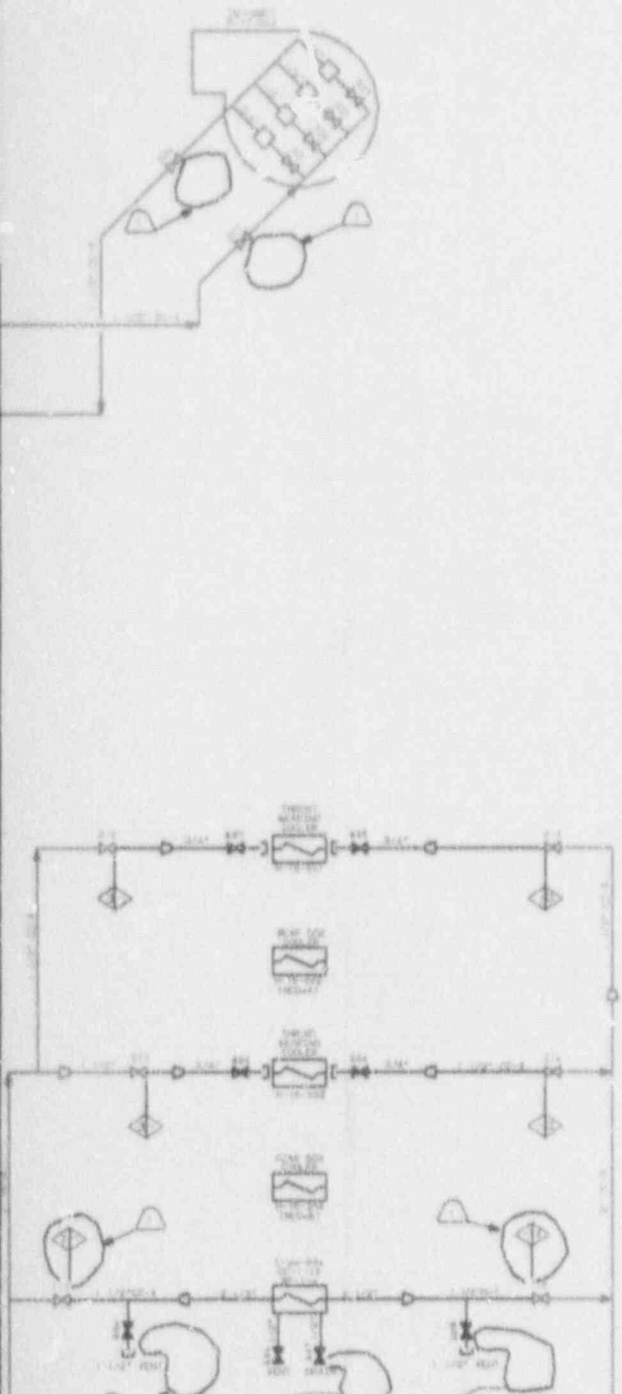

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NOTES

1. SEE SHEET 1 FOR NOTES AND REFERENCES
2. [illegible]
3. [illegible]
4. [illegible]

COLOR LEGEND

[illegible]

GPU Nuclear

REACTOR BUILDING CLOSED
COOLING WATER SYSTEM

TSI BOUNDARY DRAWING

OYSTER CREEK

DWG NO. 3E-541-A1-001

REV 1

SCALE NONE

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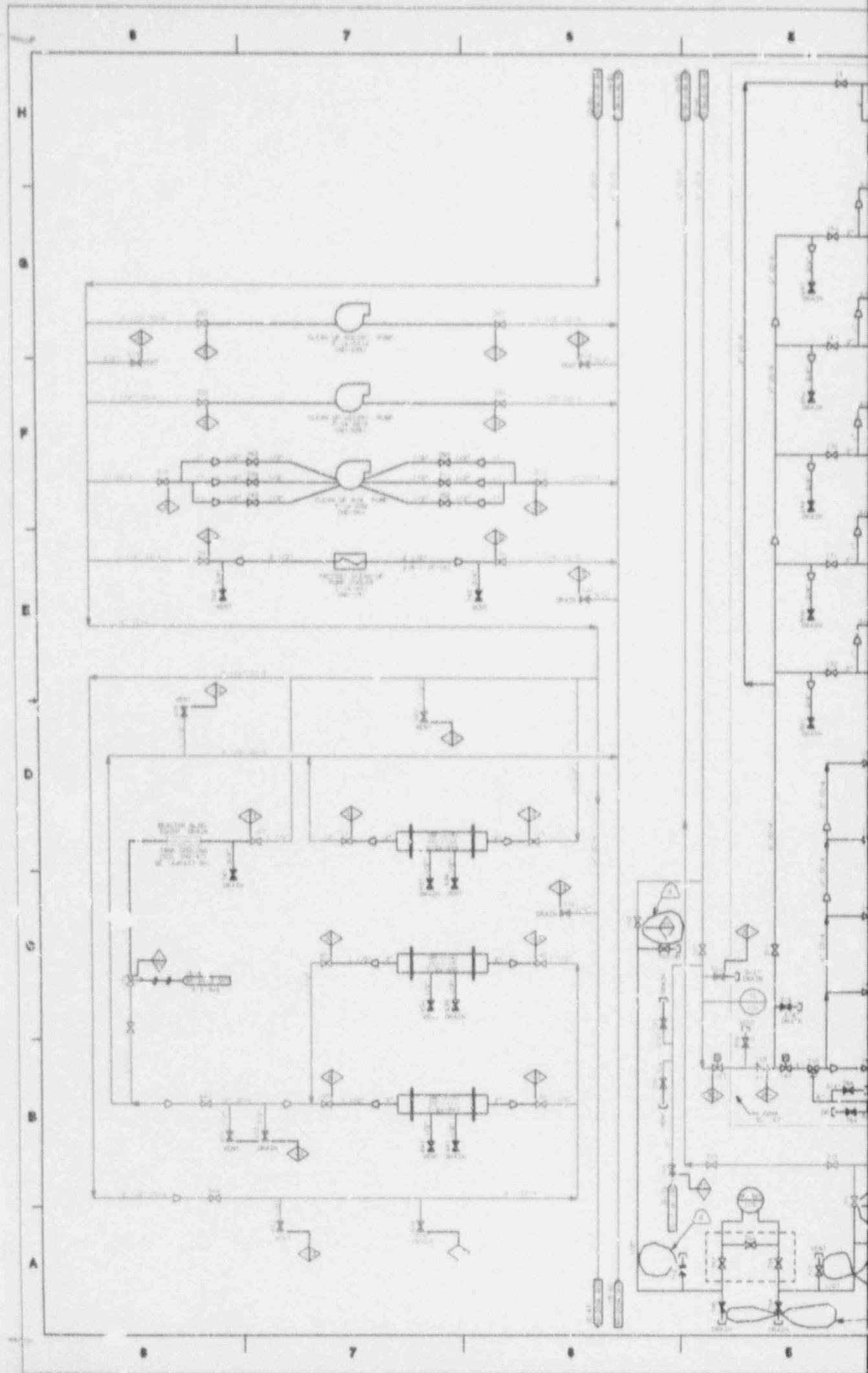

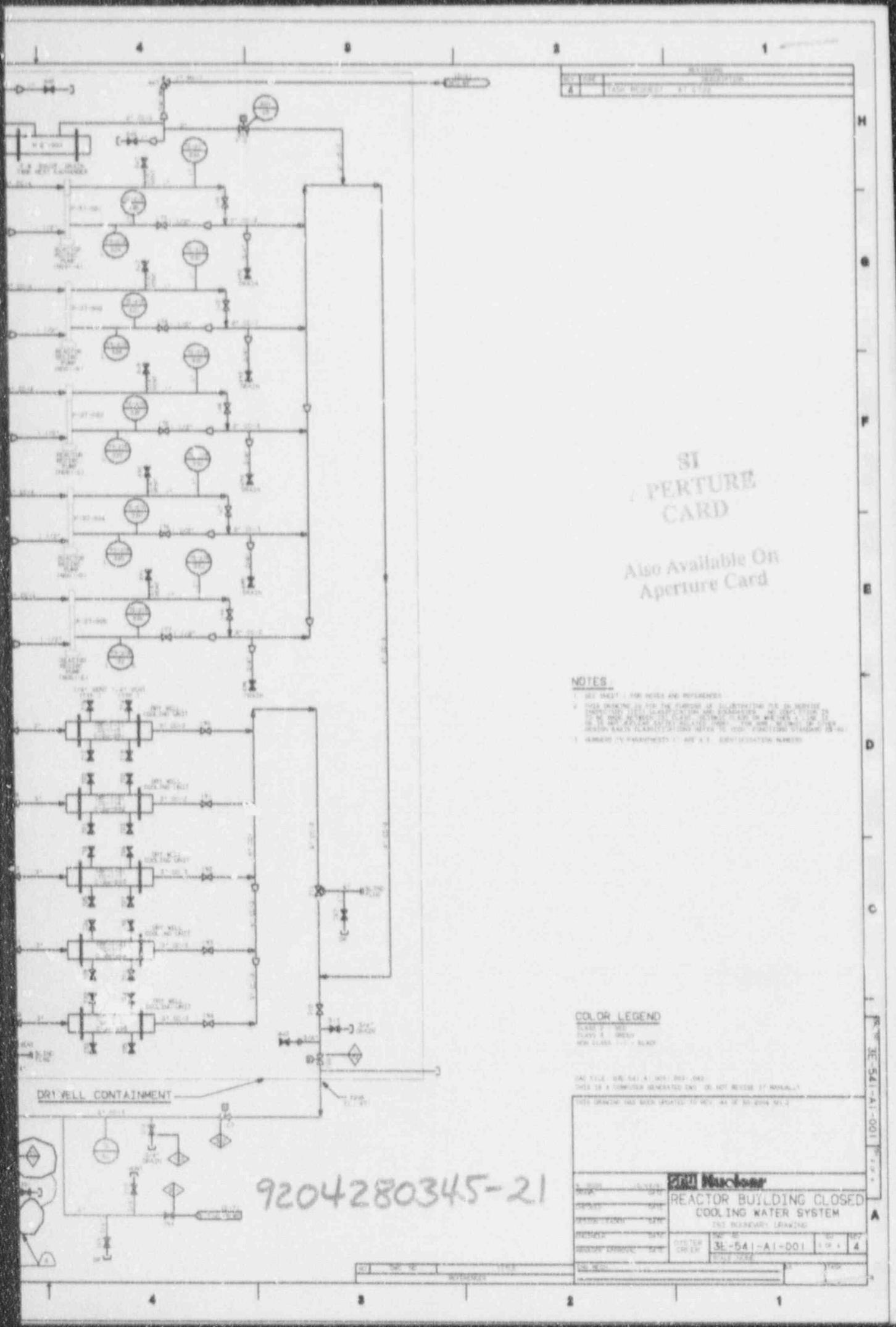

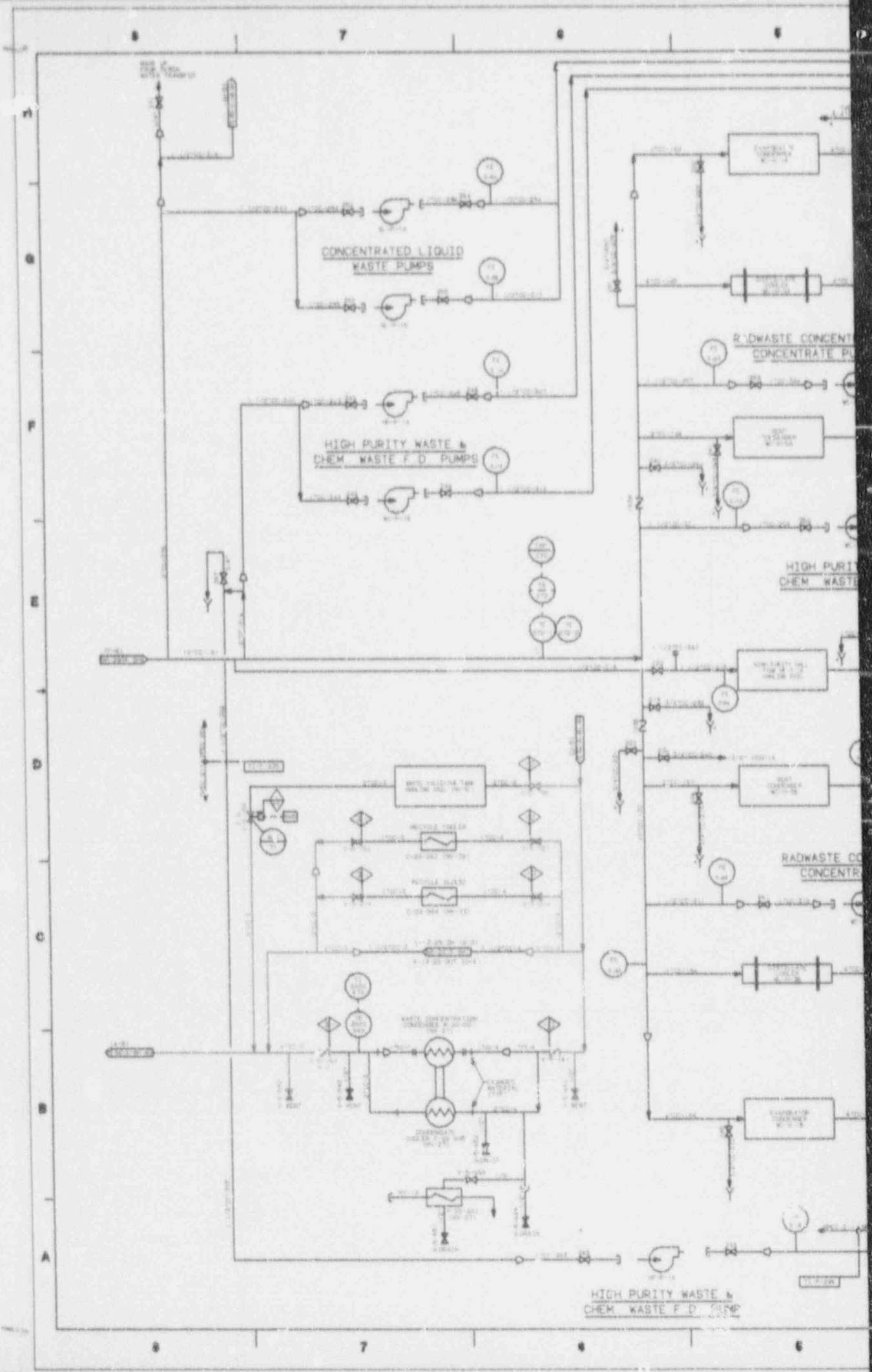
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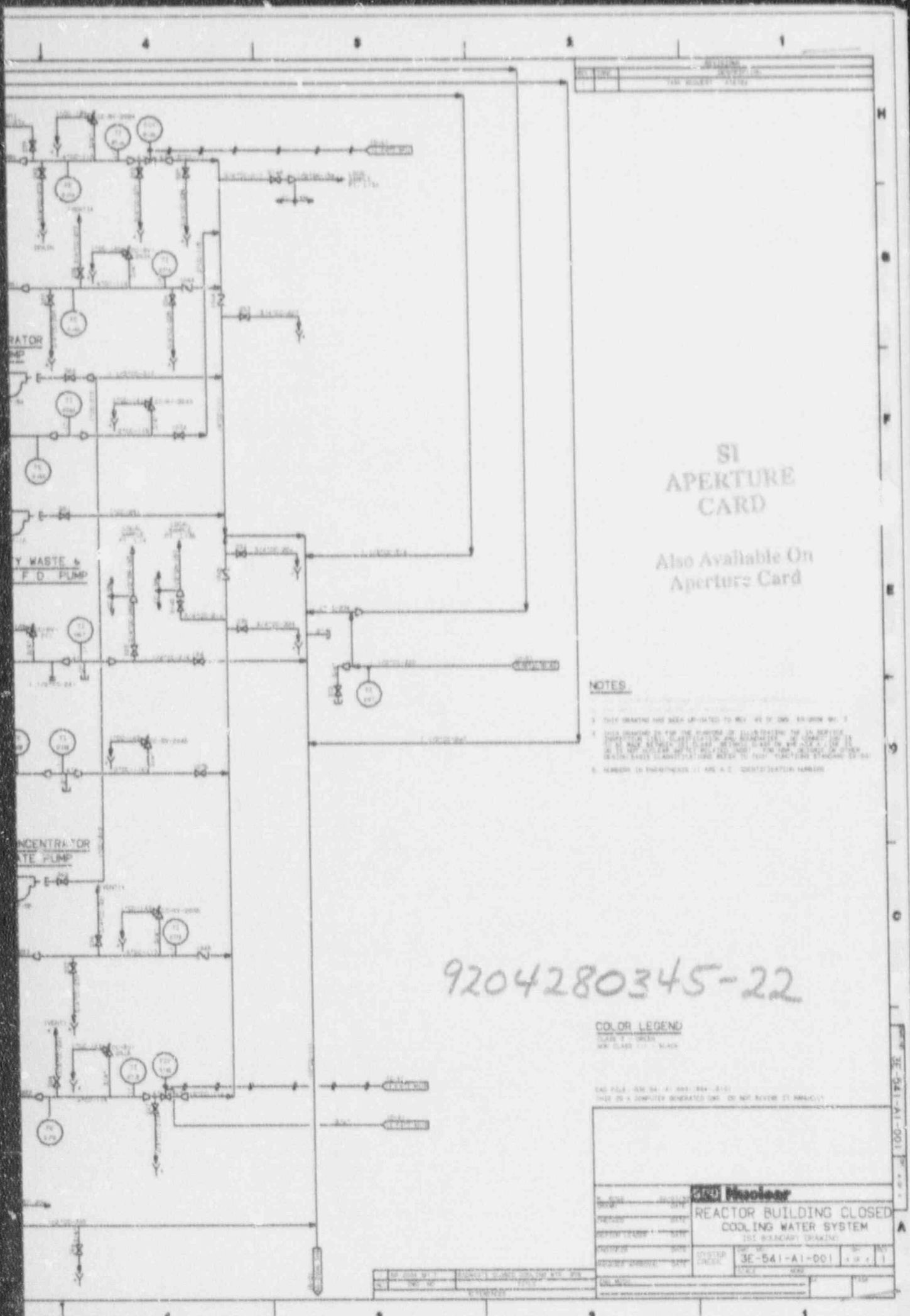
HIGH PURITY WASTE & CHEM WASTE F D SUMP



NOTES

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REACTOR BUILDING CLOSED COOLING WATER SYSTEM

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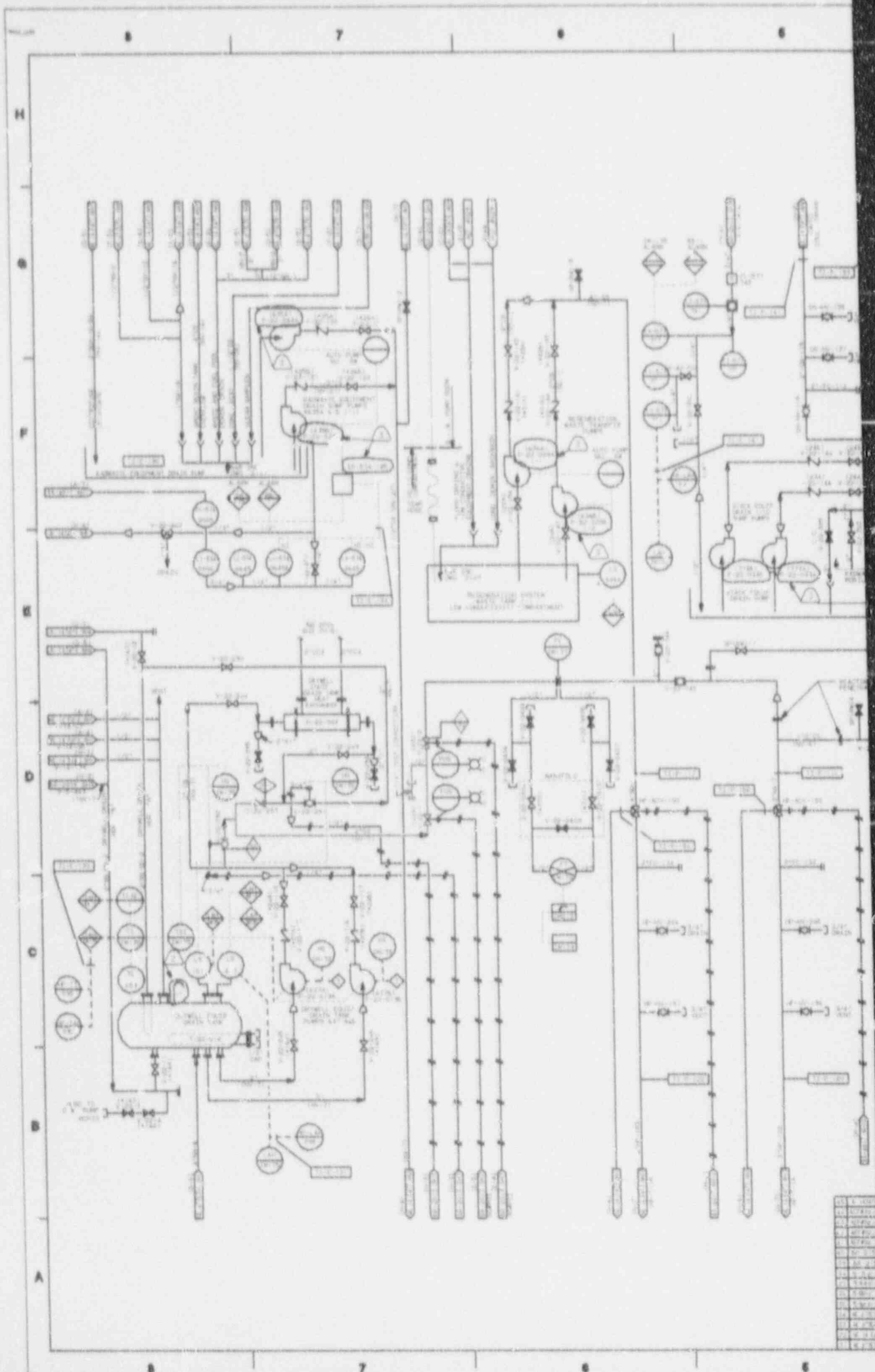

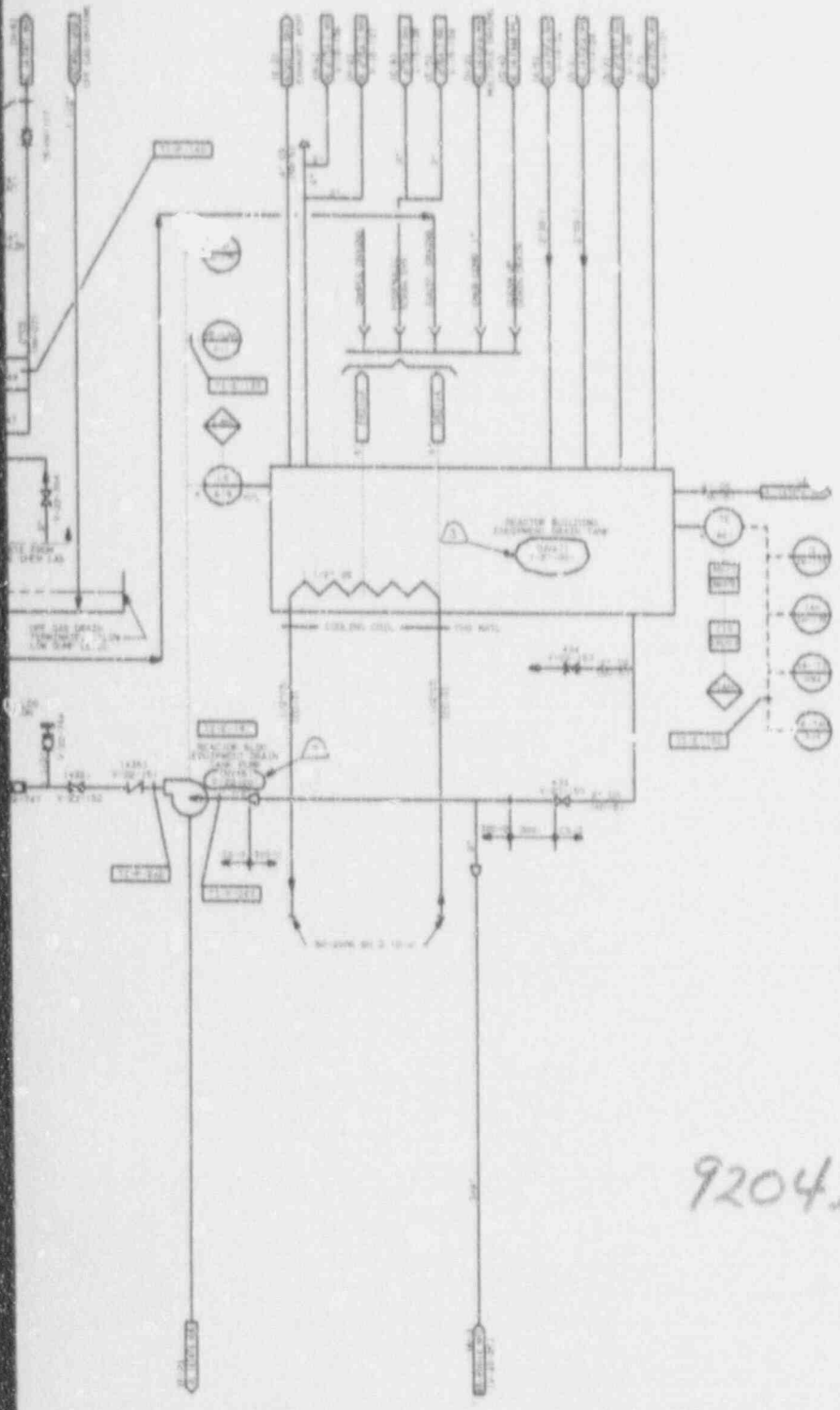

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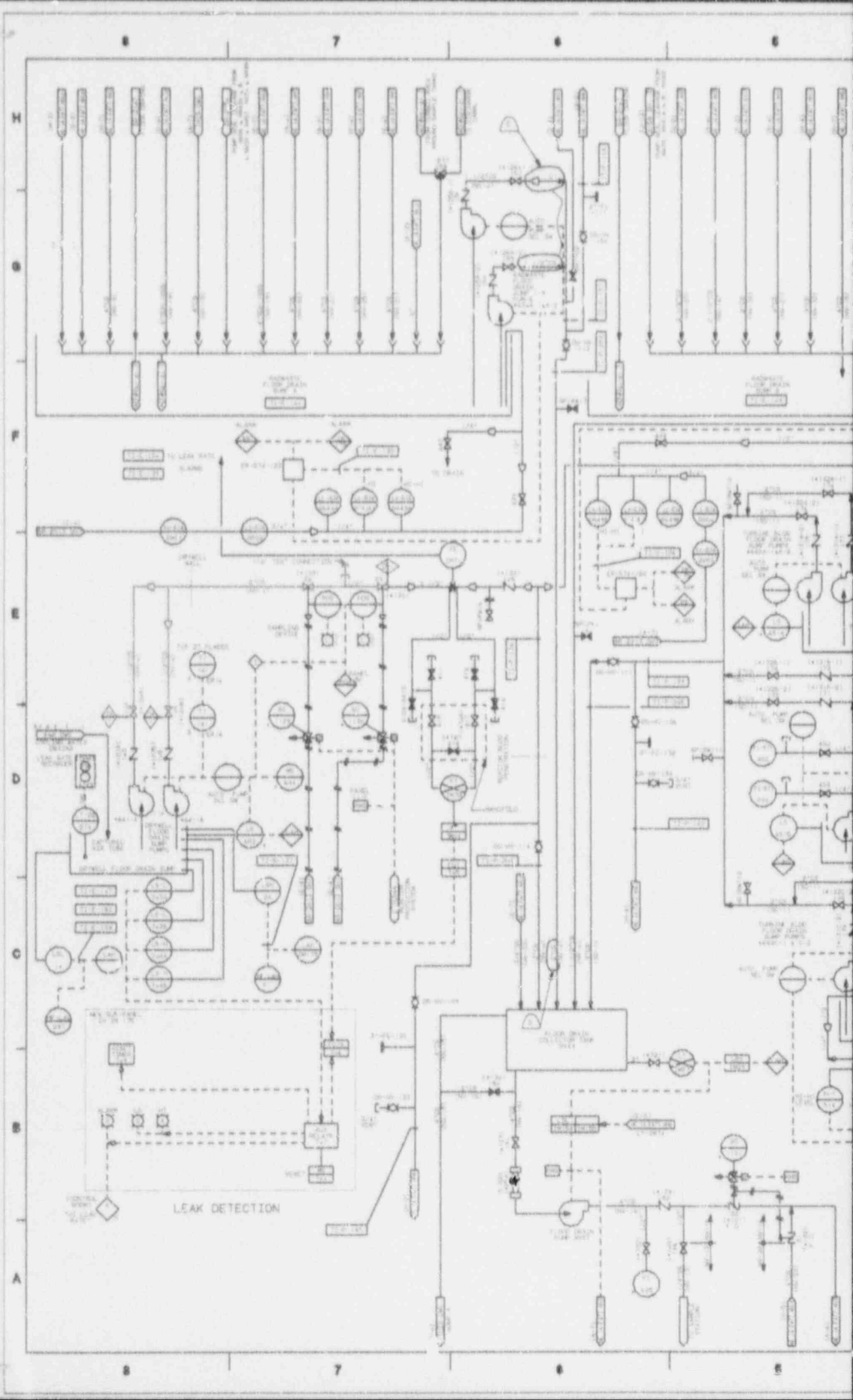
COLOR LEGEND

Nuclear

SUMPS AND WASTE
COLLECTION SYSTEM

3E-570-A1-001

3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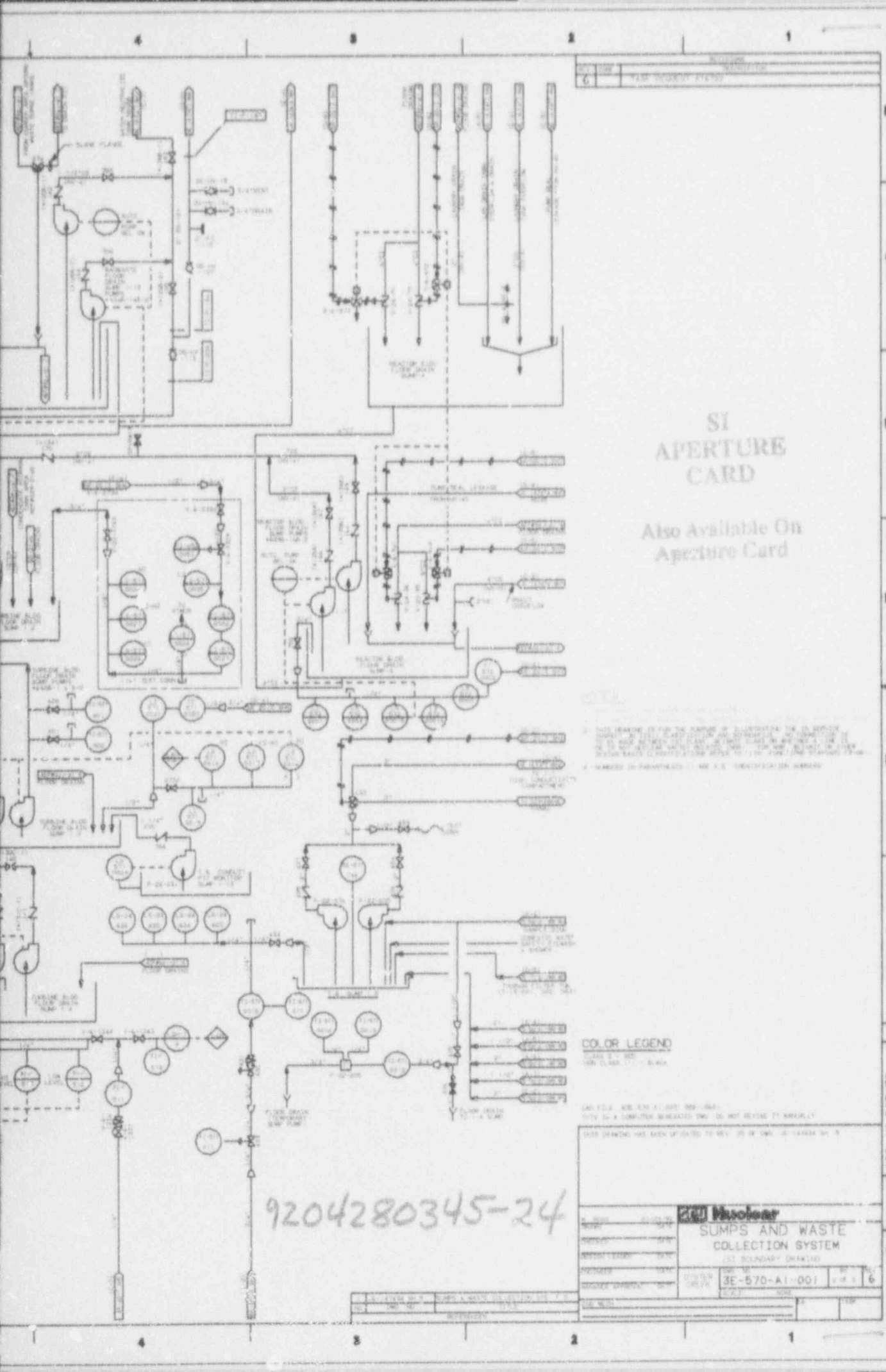

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COLOR LEGEND

SUMPS AND WASTE
COLLECTION SYSTEM

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CHAPTER 4
CLASS 1 (IWB) INSPECTION PLAN

4.1 INTRODUCTION

Subsection IWB of Section XI specifies that Class 1 components and their supports, except those that are specifically exempted, are subject to examinations. This chapter describes the Code-required examinations and the program which is to be implemented to meet those requirements.

A summary of those ASME examination categories and items numbers applicable to the Oyster Creek Third Ten Year Inspection Interval is furnished in Table 4-1.

Section 4.2 of this chapter presents the examination requirements for Class 1 components by addressing: each of the applicable examination categories listed in Table 4-1, the examination requirements specified in Table IWB-2500-1 of the Section XI Code and GPUN's plan to satisfy those requirements during the Third Ten Year Inspection Interval.

Identification of the components scheduled for examination is contained in the Oyster Creeks Ten Year Schedule, a separated document from this program plan.

4.2 EXAMINATION REQUIREMENTS FOR CLASS 1 COMPONENTS

Presented in this section is the plan for satisfying the inspection requirements of ASME Section XI, Table IWB-2500-1. ASME Code Section XI, IWA-2420 requires preparation of inspection plans that shall include Code requirements by category and item number for each component and the examination and test to be performed. The plan should also identify by category and item numbers the components that may not satisfy the required examinations and test, and the justification for applying alternative examinations measures.

The components within the ASME Section XI, ISI boundaries, defined and described in Chapter 3, were grouped by component description and matched with the applicable ASME Section XI category and item number. A count of the components by category and item number was made and examinations were scheduled based on the Code selection criteria for IWB.

TABLE 4-1
CLASS 1 EXAMINATION CATEGORIES AND ITEM NUMBERS
APPLICABLE TO THIS PROGRAM UPDATE

EXAMINATION CATEGORY	EXAMINATION ITEM NO.	PARTS EXAMINED
B-A	B1.11	REACTOR VESSEL CIRCUMFERENTIAL WELD
B-A	B1.12	REACTOR VESSEL LONGITUDINAL WELD
B-A	B1.21	REACTOR VESSEL HEAD CIRCUMFERENTIAL WELD
B-A	B1.22	REACTOR VESSEL HEAD MERIDIONAL WELDS
B-A	B1.30	REACTOR VESSEL SHELL-TO-FLANGE WELD
B-A	B1.40	REACTOR VESSEL HEAD-TO-FLANGE WELD
B-A	B1.51	REACTOR VESSEL REPAIR WELDS
B-B	NA	NA
B-D	B3.90	REACTOR VESSEL NOZZLE TO VESSEL WELDS
B-D	B3.100	REACTOR VESSEL NOZZLE INSIDE RADIUS SECTION
B-E	B4.11	PARTIAL PENETRATION WELDS VESSEL NOZZLES
B-E	B4.12	PARTIAL PENETRATION WELDS CONTROL ROD DRIVE NOZZLES
B-E	B4.13	PARTIAL PENETRATION WELDS INSTRUMENTATION NOZZLES
B-F	B5.10	REACTOR VESSEL DISSIMILAR METAL WELDS NOZZLE-TO-SAFE END NPS 4" OR GREATER
B-F	B5.20	REACTOR VESSEL DISSIMILAR METAL WELDS NOZZLE-TO-SAFE END NPS LESS THAN NPS 4"
B-F	B5.130	PIPING DISSIMILAR METAL WELDS NPS 4" OR LARGER
B-F	B5.140	PIPING DISSIMILAR METAL WELDS LESS THAN NPS 4"
B-G-1	B6.10	REACTOR VESSEL CLOSURE HEAD NUTS
B-G-1	B6.20	REACTOR VESSEL CLOSURE HEAD STUDS IN PLACE
B-G-1	B6.30	REACTOR VESSEL CLOSURE HEAD STUDS WHEN REMOVED
B-G-1	B6.40	REACTOR VESSEL THREADS IN FLANGE
B-G-1	B6.50	REACTOR VESSEL CLOSURE WASHER, BUSHINGS
B-G-1	B6.180	PUMP BOLTING

TABLE 4-1 CLASS 1 EXAMINATION CATEGORIES AND ITEM NUMBERS APPLICABLE TO THIS PROGRAM UPDATE		
B-G-1	B6.190	PUMP FLANGE SURFACE WHEN CONNECTION DISASSEMBLED
B-G-1	B6.200	PUMPS, NUTS, WASHERS
B-G-2	B7.50	PIPING BOLTING
B-G-2	B7.60	PUMP BOLTING
B-G-2	B7.70	VALVE BOLTING
B-G-2	B7.80	CRD HOUSING BOLTING
B-H	EXEMPT	INTEGRAL ATTACHMENT FOR VESSELS
B-J	B9.11	PIPING CIRCUMFERENTIAL WELDS NPS 4" OR GREATER
B-J	B9.12	PIPING LONGTIDUNAL WELDS NPS 4" OR GREATER
B-J	B9.21	PIPING CIRCUMFERENTIAL WELDS LESS THAN NPS 4"
B-J	B9.31	PIPING BRANCH CONNECTION WELDS NPS 4" OR GREATER
B-J	B9.32	PIPING BRANCH CONNECTION WELD LESS THAN NPS 4"
B-J	B9.40	PIPING SOCKET WELDS
B-K-1	EXEMPT	INTEGRAL ATTACHMENTS FOR PIPING, PUMPS, AND VALVES
B-L-1	NA	NA
B-L-2	B12.20	PUMP CASINGS
B-M-1	B12.40	PRESSURE RETAINING WELDS IN VALVE BODIES
B-M-2	B12.50	VALVES BODIES
B-N-1	B13.10	REACTOR VESSEL INTERIOR
B-N-2	B13.20	REACTOR VESSEL INTERIOR ATTACHMENTS WITHIN BELTLINE REGION
B-N-2	B13.30	REACTOR VESSEL INTERIOR ATTACHMENTS BEYOND BELTLINE REGION
B-N-2	B13.40	REACTOR VESSEL INTERIOR CORE SUPPORT STRUCTURES
B-O	B14.10	REACTOR VESSEL CRD HOUSING WELDS
B-P	CLASS 1 BOUNDARY	SYSTEM PRESSURE TEST
B-Q	NA	NA

4.2.1

A. AREAS OF EXAMINATION: CATEGORY B-A

Pressure Retaining Welds in Reactor Vessel
(Shell Welds in Beltline Region)

B. APPLICABLE ITEM NUMBERS:

B1.11 & B1.22

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-1[1] IWB-2500-2	None	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

These welds are inaccessible for either volumetric or surface examination from the outer diameter due to interferences with the biological shield wall. The accessible portions of these welds shall be examined from ID using remote inspection equipment. An access study shall determine the areas that can be examined. And, for those areas that cannot be reached a relief request shall be submitted.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-2 Category B-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric examinations of Reactor Vessel Welds in the beltline region, one circumferential weld, at a structural discontinuity, and one longitudinal weld.

The Oyster Creek Reactor Vessel has no structural discontinuities in the beltline region. An ultrasonic examination of a circumferential and longitudinal welds shall be performed from the Vessel ID using remote UT equipments. The coverage for each weld shall be determined after completing an access study of the vessel's annulus region. The two welds are scheduled for UT examination during refueling outage 17R, the third period of the interval.

PERIOD	TALLY	OUTAGE
1ST		
2ND		
3RD	(1)B1.11, VOL (1)B1.12, VOL	17R

NOTE:(1) FIG. IWB-2500-1 AND IWB-2500-2, SECTION XI, 1986 EDITION

4.2.2

A. AREAS OF EXAMINATION: CATEGORY B-A

Pressure retaining welds in Reactor Vessel.
(Head Welds).

B. APPLICABLE ITEM NUMBERS:

B1.21 & B1.22

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-3[1]	R1	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The top head welds are accessible for volumetric examinations. The lower head welds are inaccessible due to Control Rod Drive and Instrumentation Penetration interferences.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-2, Category B-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric examination of the accessible length of one head weld. The circumferential weld on the upper head is accessible for 100% of the weld length and is scheduled for examination.

The complete coverage shall be divided among refueling outages 15R, 16R, and 17R.

Inaccessible welds in the lower head shall be visually examined (VT-2) during each inservice pressure test after refueling outages.

PERIOD	TALLY	OUTAGE
1ST	(1/3) B1.21, VOL.	15R
2ND	(1/3) B1.21, VOL.	16R
3RD	(1/3) B1.21, VOL.	17R

NOTE:(1) FIG. IWB-2500-3, SECTION XI, 1986 EDITION

4.2.3

A. AREAS OF EXAMINATION: CATEGORY: B-A
Pressure Retaining Welds in Reactor Vessel
(Shell to Flange Weld)

B. APPLICABLE ITEM NUMBERS:

B1.30

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-4[1]	None	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The weld is accessible for inspection from one side.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-2, Category B-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric examination of the Reactor Vessel Shell to Flange weld, essentially 100% by the end of the interval. At least 50% of the weld shall be examined by the first period and the remainder by the end of the third period.

The shell to flange weld has been scheduled for Outage 15R, 50% coverage and Outage 17R, complete coverage.

PERIOD	TALLY	OUTAGE
1ST	(1/2) B1.30, VOLUMETRIC	15R
2ND		
3RD	(1/2) B1.30, VOLUMETRIC	17R

NOTE: (1) FIG. IWB-2500-4, SECTION XI, 1986 EDITION

4.2.4

A. AREAS OF EXAMINATION: CATEGORY B-A

Pressure Retaining Welds Reactor Vessel
(Head to Flange Weld)

B. APPLICABLE ITEM NUMBERS:

B1.40

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-5[1]	None	Volumetric & Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The weld is accessible for inspection from one side.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-2 Category B-A.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric and surface examination on the closure head to flange weld essentially 100% of weld length by the end of the interval.

Volumetric examinations from one side shall be performed on 100% of the length of this weld during the inspection interval.

PERIOD	TALLY	OUTAGE
1ST	(1/3) B1.40, VOL.& SUR.	15R
2ND	(1/3) B1.40, VOL.& SUR.	16R
3RD	(1/3) B1.40, VOL.& SUR.	17R

NOTE: (1) FIG.IWB-2500-5, SECTION XI, 1986 EDITION

4.2.5

A. AREAS OF EXAMINATION: CATEGORY B-A

Pressure Retaining Welds in Reactor Vessel
(Repair welds in Beltline Region)

B. APPLICABLE ITEM NUMBERS:

B1.51

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-1[1] IWB-2500-2	None	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The welds in the beltline region are inaccessible for volumetric examination from the outer diameter due to interferences with the biological shield wall. This weld region shall be examined from the I.D.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See F. below

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric examination of one weld repair area during the interval. GPUN is engaged in obtaining the non-destructive examination records pertaining to the Oyster Creek reactor pressure vessel (including shell region, upper and lower head, and primary nozzles) for the following item (1) vessel plate and forgings, (2) vessel welds and (3) cladding.

The known repair welds within the beltline region shall be scheduled for examination along with welds scheduled for Item No. B1.11 & B1.12.

NOTE (1) FIG. IWB-2500-1 AND IWB-2500-2, SECTION XI, 1986 EDITION

TABLE 4-2
CATEGORY B-A
PRESSURE RETAINING WELDS IN THE REACTOR VESSEL
SCHEDULED FOR EXAMINATION

ITEM NO.	PARTS EXAMINED	ID NUMBER	METHOD SCHEDULED	ACCESSIBILITY
B1.10	SHELL WELDS			
B1.11	CIRCUMFERENTIAL	NR02-3-564	ULTRASONIC	FROM ID
B1.12	LONGITUDINAL	NR02-2-564C	ULTRASONIC	FROM ID
B1.20	HEAD WELDS (UPPER)			
B1.21	CIRCUMFERENTIAL	NR02-2-574	ULTRASONIC	FROM OD
B1.20	HEAD WELDS (LOWER)			
B1.21	CIRCUMFERENTIAL	NR02-1-562 NR02-2-562	VT-2 VT-2	RELIEF REQUEST R1
B1.22	MERIDIONAL	NR02-3-562A NR02-3-562B NR02-3-562C NR02-3-562D NR02-3-562E NR02-3-562F NR02-4-562A NR02-4-562B NR02-4-562C NR02-4-562D NR02-4-562E NR02-4-562F NR02-4-562G	VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2 VT-2	RELIEF REQUEST R1
B1.30	SHELL TO FLANGE	NR02-3-563	ULTRASONIC	FROM OD ONE SIDE
B1.40	HEAD TO FLANGE	NR02-1-574	ULTRASONIC	FROM OD ONE SIDE
B1.50	REPAIR WELDS	TO BE DETERMINED	ULTRASONIC	FROM ID

4.2.6

A. AREAS OF EXAMINATION: CATEGORY B-D
Full Penetration welds of Nozzles in Vessels
(Reactor Vessel)

B. APPLICABLE ITEM NUMBERS:

B3.90 & B3.100

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. 2500-7[1]	None	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

Seventeen nozzles below elevation 82'-2" are surrounded by the biological shield wall making access from the O.D. surface difficult for manual UT inspection. See Table 4-3.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-3 Category B-D

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric examination of at least 25% (6) but not more that 50% (12) of the nozzles to vessel weld and inner radius by the end of the first period and the remainder of the nozzles by the end of the interval.

There are twenty-four Reactor Vessel Nozzles that apply to this examination category. The requirements shall be satisfied by scheduling 8 for the first period, 7 for the second period and 9 for the third period.

PERIOD	TALLY		OUTAGE
1ST	(1) B3.90, VOL (7) B3.90, VOL	(1) B3.100, VOL (7) B3.100, VOL	14R 15R
2ND	(7) B3.90, VOL.	(7) B3.100, VOL	16R
3RD	(6) B3.90, VOL. (3) B3.90, VOL.	(6) B3.100, VOL (3) B3.100, VOL	17R 18R

NOTE: (1) FIG. IWB-2500-7, SECTION XI, 1986 EDITION

TABLE 4-3
CATEGORY B-D
FULL PENETRATION WELDED NOZZLES IN THE
REACTOR VESSEL

NOZZLE DESCRIPTION	QUANTITY	ELEVATION
RECIRCULATION OUTLET	5	53'-9"
RECIRCULATION INLET	5	46'
MAIN STEAM	2	89'
ISOLATION CONDENSER	2	84'-10"
FEEDWATER	4	74"-11"
CRD HYDRAULIC RETURN	1	74'-11"
CORE SPRAY	2	73'-9"
UPPER HEAD	3	SEE NOTE 1

NOTE 1: VESSEL HEAD IS REMOVED DURING REFUELING TO AN ACCESSIBLE LOCATION.

4.2.7

A. AREAS OF EXAMINATION: CATEGORY B-E

Pressure retaining partial penetration welds in vessels.

B. APPLICABLE ITEM NUMBERS:

B4.11, B4.12, B4.13

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
External Surfaces	None	Visual, VT-2

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-4 category B-E

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires visual examinations of at least 25% of the partial penetration welds during system hydrostatic test. This test is scheduled to be performed at the end of the interval.

The area surrounding each weld shall receive a visual examination for evidence of leakage during system hydrostatic testing.

TABLE 4-4
CATEGORY B-E
PRESSURE RETAINING PARTIAL PENETRATION
WELDED NOZZLES IN REACTOR VESSEL

NOZZLE NUMBER	QUANTITY	FUNCTION
*	137	CONTROL ROD DRIVE
*	69	FLUX MONITOR
N10	1	HI PRESS SEAL LEAK DETECT
N11	1	LO PRESS SEAL LEAK DETECT
N12	1	CORE DIFF. PRESS
N13	1	PROTECT SYS. REF. CO. TOP
N13B	1	PROTECT SYS. REF.
N14A	1	LEVEL CONTROL REF. POT
N14B	1	STATIC CONTROL STATIC LEG
N15A	1	LEVEL CONTROL REF. POT
N15B	1	LEVEL CONTROL STATIC LEG
N16A	1	PROT. SYS. REF. COL. TEP
N16B	1	PROT. SYS. REF. CO. BOTT.
N17A	1	WIDE RANGE LEVEL TOP
N17B	1	WIDE RANGE LEVEL BOTT.
N18	1	DRAIN

* Nozzle numbers were not assigned by vendor.

4.2.8

A. AREAS OF E[illegible]NATION: CATEGORY B-F

Pressure retaini[illegible] lissimilar metal welds.
(Reactor Vessel N[illegible]zle to Safe End)

B. APPLICABLE ITEM NUMBERS:

B5.10 & B5.20

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-8[1]	None	Volumetric and/or surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

Seventeen nozzles below elevation 82'-2" are surrounded by the biological shield wall making access from the O.D. surface difficult for manual UT inspection. See Table 4-3.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-3 category B-D

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a volumetric and surface examination of 100% of the dissimilar metal welds (nozzle safe-end welds) in the i[illegible]terval. The examinations may be performed co-incident with the nozz[illegible] examinations required by examination category B-D

Twenty-three safe-ends are scheduled for volumetric and surface examinations and two nozzles (CRD return 3" & liquid poison 2") are scheduled for surface only.

The exams are scheduled co-incident with the nozzle to vessel welds under examination category B-D. Liquid poison a partial penetration welds, nozzle to vessel is scheduled at 18R making a total of 25 nozzle to safe end exams.

NOTE: (1) FIG. IWB-2500-8, SECTION XI, 1986 EDITION

4.2.9

A. AREAS OF EXAMINATION: CATEGORY B-F

Pressure retaining dissimilar metal welds.
(Piping)

B. APPLICABLE ITEM NUMBERS:

B5.130 & B5.140

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-8[1]	None	Volumetric and/or surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

All welds are accessible.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category B-F.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a volumetric and/or surface examination of 100% of the dissimilar metal welds during the interval. This requirement applies to five pipe welds. The requirement shall be satisfied as follows:

PERIOD	TALLY	OUTAGE
1ST	(2) B5.130, Volumetric & Surface	15R
2ND		
3RD	(2) B5.130, Volumetric & Surface (1) B5.140, Surface	17R 17R

NOTE: (1) FIG. IWB-2500-8, SECTION XI, 1986 EDITION

A. AREAS OF EXAMINATION: CATEGORY B-G-1

Pressure retaining bolting, greater than 2" in diameter. (Reactor Vessel)

B. APPLICABLE ITEM NUMBERS:

B6.10, B6.20, B6.30, B6.40 and B6.50

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-12[1]	None	Volumetric, Surface and Visual

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category B-G-1

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a surface examination of all closure head nuts, volumetric exam of all studs in place or volumetric and surface exam of all studs when removed, volumetric exams of threads in vessel flange and visual exams of closure washers and bushing. This requirement applies to the sixty-four (64) closure head bolting assemblies. The examinations shall be performed on a complete set of bolting during the exam period and shall satisfy the interval requirement as follows:

PERIOD	TALLY	OUTAGE
1ST	(21) Bolting Combination Vol., Sur., VT	14R
2ND	(21) Bolting Combination Vol., Sur., VT	16R
3RD	(22) Bolting Combination Vol., Sur., VT	18R

NOTE: (1) FIG. IWB-2500-12, SECTION XI, 1986 EDITION

4.2.11

A. AREAS OF EXAMINATION: CATEGORY B-G-1

Pressure retaining bolting, greater than 2" in diameter. (Pump)

B. APPLICABLE ITEM NUMBERS:

B6.180, B6.190, and B6.200

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. No. IWB-2500-12[1]	None	Volumetric and Visual (VT-1)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The components are accessible for examinations.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

The components subject to examination are the bolting on Recirculation Pumps NG01-A, B, C, D, & E.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a volumetric examination on bolting greater than 2" in diameter. The bolting may be examined: (a) in place under tension, (b) when the connection is disassembled, or (3) when the bolting is removed.

For pumps, examinations are limited to components selected for examination under examination category B-L-2 which in turn is limited to at least one pump in each group of pumps performing similar functions in the system. This requirement applies to the sixteen studs and nuts on each of the five reactor recirculation pumps.

One pump has been scheduled for examination during refueling outage 18R, third period. If disassembly of a pump is required during the third interval, the flange surface shall be examined at that time.

PERIOD	TALLY	OUTAGE
1ST		
2ND		
3RD	(1) B6.180, VOL. (1) B6.200, VT-1	18R

NOTE: (1) FIG. IWB-2500-12, SECTION XI, 1986 EDITION

4.2.12

A. AREAS OF EXAMINATION: CATEGORY B-G-2

Pressure retaining bolting, 2" and less in diameter. (Piping)

B. APPLICABLE ITEM NUMBERS:

B7.50

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Surface	None	Visual (VT-1)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category B-G-2

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination on bolting 2" and less in diameter. The bolting may be examined: (1) in place under tension, (2) when the connection is disassembled, or (3) when the bolting is removed. For piping, the examinations are limited to components selected for examination under the examination category B-J, which in turn is limited to at least 25% of the total number under that joint configuration.

This requirement applies to a total number of 11 bolted joints. Three have been scheduled.

PERIOD	TALLY	OUTAGE
1ST	(1) B7.50, VT-1	15R
2ND	(1) B7.50, VT-1	16R
3RD	(1) B7.50, VT-1	17R

A. AREAS OF EXAMINATION: CATEGORY B-G-2

Pressure retaining bolting, 2" and less in diameter. (Pumps)

B. APPLICABLE ITEM NUMBERS:

B7.60

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Surface	None	Visual (VT-1)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

The components subject to examinations are the bolting on Recirculation Pumps NG01-A, B, C, D & E.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination on bolting 2" and less in diameter. The bolting may be examined: (1) in place under tension, (2) when the connection is disassembled, or (3) when the bolting is removed. For pumps, examinations are limited to components selected for examination under examination category B-L-2 which in turn is limited to at least one pump in each group of pumps performing similar functions in the system.

This requirement applies to the 24 cap screws on each of the five reactor recirculation pumps.

One pump has been scheduled for examination during refueling outage 18R, third period. In addition, the 5 pumps are scheduled for bolting examinations each cycle as a Target of Opportunity. This coordinates the ISI requirements with other maintenance activities.

PERIOD	TALLY	OUTAGE
1ST		
2ND		
3RD	(1) B7.60, VT-1	18R

4.2.14

A. AREAS OF EXAMINATION: CATEGORY B-G-2

Pressure retaining bolting, 2" and less in diameter. (Valves)

B. APPLICABLE ITEM NUMBERS:

B7.70

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Surface	None	Visual (VT-1)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-6, Category B-M-2

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination on bolting 2" and less in diameter. The bolting may be examined: (1) in place under tension, (2) when the connection is disassembled, or (3) when the bolting is removed. For valves, examinations are limited to components selected for examination under examination category B-M-2, which in turn is limited to at least one valve within each group of valves that are of the same size, constructional design and manufacturing method and that perform similar functions in the system. This requirement applies to bolting on seventy valves exceeding nominal pipe size of 4". One valve from each group in a system was selected for examination. By the end of the interval, bolting on 18 valves shall be examined. Meanwhile, during the interval, the 70 valves are scheduled for bolting examinations each cycle as a Target of Opportunity. This coordinates the ISI requirements with other maintenance activities.

PERIOD	TALLY	OUTAGE
1ST	(3) B7.70, VT-1 (4) B7.70, VT-1	14R 15R
2ND	(4) B7.70, VT-1	16R
3RD	(4) B7.70, VT-1 (3) B7.70, VT-1	17R 18R

4.2.15

A. AREAS OF EXAMINATION: CATEGORY B-G-2

Pressure retaining bolting, 2" and less in diameter. (CRD Housing)

B. APPLICABLE ITEM NUMBERS:

B7.80

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Surface	None	Visual (VT-1)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are essible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category B-G-2

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination of the bolting on the Control Rod Drive Housing when disassembled. This requirement applies to the pressure retaining bolting on the 137 CRD Housings.

Direct visual examination shall be performed on any bolting to be installed into the drives following disassembly. The 137 CRD Housings are scheduled for bolting examination each Refueling Outage as a Target of Opportunity.

4.2.16

A. AREAS OF EXAMINATION: CATEGORY B-H

Integral Attachments for Vessels
(Reactor Vessel)

B. APPLICABLE ITEM NUMBERS:

B8.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWB-2500-13[1] IWB-2500-15[1]	None	Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

Only four areas approximately 18" long of the vessel-to-support skirt weld are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED.

Components not scheduled for examination.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI alleviates the requirements for examinations of reactor vessel integrally welded attachments for all Inspection Programs B during the 3rd and 4th inspection intervals.

Oyster Creek is entering its third inspection interval and has chosen the option of not performing the prescribed scope of inspections standard for this examination category.

NOTE: (1) FIG. IWB-2500-13 AND IWB-2500-15, SECTION XI, 1986 EDITION

A. AREAS OF EXAMINATION: CATEGORY B-J

Pressure retaining welds in piping.

B. APPLICABLE ITEM NUMBERS:

B9.11, B9.12, B9.21, B9.31, B9.32 & B9.40

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWB-2500-8[1] Fig. IWB-2500-9[1] Fig. IWB-2500-10[1] Fig. IWB-2500-11[1]	R2 R9	Volumetric and/or Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category B-J.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires:

1. A volumetric and surface examination on circumferential (item B9.11) and longitudinal (item B9.12) welds in piping with an NPS of 4" or greater.
2. A surface examination on circumferential (item B9.21) and longitudinal (item B9.22) welds in piping with an NPS less than 4".
3. A volumetric and surface examination on branch pipe connection welds where the branch has an NPS of 4" or greater (item B9.31).
4. A surface examination on branch pipe connection welds where the branch has an NPS less than 4" (item B9.52).
5. A surface examination on all socket welds (item B9.40).

The selection of welds for examination shall be in accordance with Table IWB-2500-1, Category B-J, Note (1) which states as follows:

1. Examinations shall include the following:

   a) All terminal ends in each pipe or branch run connected to vessels.

F. CONTINUED ON NEXT PAGE

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED (CONTINUED)

b) All terminal ends and joints in each pipe or branch run connected to other components where the stress levels exceed either of the following limits under loads associated with specific seismic events and operational conditions:
   1) Primary plus secondary stress intensity range of $2.4S_m$ for ferritic steel and austenitic steel.
   2) Cumulative usage factor U of 0.4.

c) All dissimilar metal welds between combinations of:
   1) Carbon or low alloy steels to high alloy steels.
   2) Carbon or low alloy steels to high nickel alloys.
   3) High alloy steels to high nickel alloys.

d) Additional piping welds so that the total number of circumferential butt welds (or branch connection or socket welds) selected for examination equals 25% of the circumferential butt welds (or branch connection or socket welds) in the reactor coolant piping system. This total does not include welds excluded by IWB-1220. These additional welds may be located in one loop (one loop is defined for both PWR and BWR plants in the 1977 edition).

In compliance with the weld examination selection criteria from Table IWB-2500-1, Category B-J.

a) All terminal end welds connected to the reactor vessel are scheduled for examination and shall not be substituted.

b) All carbon steel piping inside the Drywell comply with both limits of 2.4Sm and U<0.4. Stainless Steel piping inside the Drywell is on the IGSCC schedule and shall be examined 100% within the interval.

c) All dissimilar metal welds have been categorized B-F and are scheduled for examination in accordance with Table IWB-2500-1, Category B-F requirements.

d) The total number of circumferential butt welds, branch connection welds and socket welds equal 800 (See Table 4-5). The quantity of welds selected for examination this interval is 200 and is proportionally distributed among the item numbers; and where possible the initial welds from the previous interval were selected for re-examination. These welds are scheduled for volumetric (V) and/or surface (S) examinations.

PER.	TALLY	OTG.
1ST	(11)B9.11,VS (1)B9.21,S (1)B9.31,VS (1)B9.32,S (7)B9.40,S (25)B9.11,VS (3)B9.21,S (2)B9.31,VS (1)B9.32,S (13)B9.40,S	14R 15R
2ND	(32)B9.11,VS (1)B9.21,S (1)B9.31,VS (1)B9.32,S (15)B9.40,S	16R
3RD	(27)B9.11,VS (1)B9.21,S (2)B9.31,VS (2)B9.32,S (10)B9.40,S (22)B9.11,VS (6)B9.21,S (1)B9.31,VS (2)B9.32,S (12)B9.40,S	17R 18R

NOTE: (1) FIG.IWB-2500-8, IWB-2500-9, IWB-2500-10 AND IWB-2500-11, SECTION XI, 1986 EDITION

TABLE 4-5
CATEGORY B-J
PRESSURE RETAINING WELDS
IN CLASS 1 PIPING

SYSTEMS	ITEM NO.							TOTAL
	B9.11	B9.12[1]	B9.21	B9.22	B9.31	B9.32	B9.40	
ISOLATION CONDENSER	53							53
CORE SPRAY	70	5						75
LIQUID POISON							45	45
SHUTDOWN COOLING	86				3	3		92
CLEANUP DEMIN.	52		2				2	56
RX. HEAD COOLING	9		1				43	53
RX. HEAD VENT							28	28
REACTOR RECIRCULATION	79		5		5	22	60	171
CONTROL ROD DRIVE RETURN			37					37
MAIN STEAM	60		2		20	3	50	135
FEEDWATER	60							60
TOTALS	469	5	47		28	28	228	805
25%	117.25		11.75		7	7	57	200
SCHEDULED	117		12		7	7	57	200

NOTE 1: LONG SEAM WELDS CATEGORY B9.12 IS NOT COUNTED IN SCHEDULED EXAMINATIONS.

4.2.18

A. AREAS OF EXAMINATION: CATEGORY B-K-1

Integral Attachments for Piping, Pump, and Valves

B. APPLICABLE ITEM NUMBERS:

B10.10, B10.20 and B10.30

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWB-2500-15[1]	None	Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Augmented scope only. See Table 4-6.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI alleviates the requirements for examinations of integral attachments for all Inspection Programs B during the 3rd and 4th inspection intervals.

Oyster Creek is entering its third inspection interval and has chosen the option of not performing the prescribed scope of inspections standard for this examination category. Instead, GPUN shall conduct augmented examinations on the Drywell penetration seal welds integrally attached at the pressure boundary of the Class 1 piping penetrating containment. A surface examination, on the area of interest located on the secondary side of containment, shall be performed during the interval. The scope of components is defined in Table 4-6, Drywell Penetrations Integrally Welded to Class 1 Piping Pressure Boundary.

NOTE: (1) FIG. IWB-2500-15, SECTION XI, 1986 EDITION

TABLE 4-6
DRYWELL PENETRATIONS INTEGRALLY
WELDED TO CLASS 1 PIPING PRESSURE BOUNDARY

SYSTEM	NUMBER OF PENETRATIONS	PENETRATION NUMBER
ISOLATION CONDENSER	4	X-3A X-3B X-5A X-5B
CORE SPRAY	2	X-12B X-70
LIQUID POISON	1	X-6
SHUTDOWN COOLING	2	X-7 X-8
CLEAN-UP DEMIN.	2	X-9 X-10
REACTOR HEAD COOLING	1	X-62
CONTROL ROD DRIVE RETURN	1	X-61
MAIN STEAM	2	X-2A X-2B
FEEDWATER	2	X-4A X-4B

4.2.19

A. AREAS OF EXAMINATION: CATEGORY B-L-2

Pump Casings

B. APPLICABLE ITEM NUMBERS:

B12.20

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Internal Surfaces	R3	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The component are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

The components subject to examination are the Recirculation Pumps, NG01-A, B, C, D, & E.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination of the internal pressure boundary surfaces of at least one of the five recirculation pumps during the inspection interval. The examination may be performed at or near the end of the inspection interval.

A visual examination of pump casing interiors shall only be performed if a pump is disassembled for maintenance or repairs. The 5 pumps are scheduled each cycle for internal surface visual examination as a Target of Opportunity. This coordinates the ISI requirement with all maintenance activities.

A. AREAS OF EXAMINATION: CATEGORY B-M-1

Pressure retaining welds in valve bodies.

B. APPLICABLE ITEM NUMBERS:

B12.40

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWB-2500-17[1]	R8	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

Limited examination due to valve body configuration.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

The components subject to examination are the EMRV's (V-1-173, 174, 175, 176 & 177).

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a volumetric examination of 100% of weld length of at least one EMRVs. Due to the configuration of the EMRVs a full volumetric examination cannot be performed.

Three EMRVs are removed during odd number Outages, and two valves are removed during even number Outages. GPUN has scheduled a surface examination on both the I.D. and O.D. surfaces of the pressure retaining welds for one valve and a visual examination for the balance.

PERIOD	TALLY	OUTAGE
1ST	(2) B12.40, Visual (1) B12.40, Surface	15R
2ND		
3RD	(2) B12.40, Visual	18R

NOTE: (1) FIG. IWB-2500-17, SECTION XI, 1986 EDITION

A. AREAS OF EXAMINATION: CATEGORY B-M-2

Valve bodies.

B. APPLICABLE ITEM NUMBERS:

B12.50

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Internal Surfaces	R4	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

All components are accessible.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See Table 4-7, Category B-M-2

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination during the interval on the internal pressure boundary surface of at least one valve within each group of valves of the same constructional design, manufacturing method, and that performs similar functions in the system.

The examinations may be performed at or near the end of the inspection interval.

Seventy valves exceeding nominal pipe size of 4" are in the Class 1 boundary. Fifteen valves have been categorized as candidates for this inspection requirement. Visual examination of valve body interiors will only be performed if a valve is disassembled for maintenance or repair. Meanwhile the 70 valves are scheduled for interior surface visual examination each cycle as a Target of Opportunity. This coordinates the ISI requirements with maintenance activities.

TABLE 4-7
CATEGORY B-M-2
CLASS 1 VALVE BODY GROUPING

SYSTEM: ISOLATION CONDENSER						
GROUP	COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-14-30	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-31	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-32	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-33	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-34	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-35	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-36	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-14-37	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION

SYSTEM: CORE SPRAY						
GROUP	COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-20-15	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-20-17	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-20-21	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-20-23	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-20-40	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-20-41	8"	GATE	ANCHOR-DARLING	CAST	ISOLATION
B	V-20-150	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION
	V-20-151	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION
	V-20-152	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION
	V-20-153	8"	SWGCK	ATWOOD-MORRILL	CAST	ISOLATION

TABLE 4-7
CATEGORY B-M-2
CLASS 1 VALVE BODY GROUPING

SYSTEM: SHUTDOWN COOLING

GROUP	COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-17-55	8"	GLOBE	ANCHOR-DARLING	CAST	FLOW CTL
	V-17-56	3"	GLOBE	ANCHOR-DARLING	CAST	FLOW CTL
	V-17-57	8"	GLOBE	ANCHOR-DARLING	CAST	FLOW CTL
B	V-17-205	8"	GLOBE	ANCHOR-DARLING	CAST	ISOLATION
	V-17-206	8"	GLOBE	ANCHOR-DARLING		ISOLATION
C	V-17-207	8"	GLOBE	VELAN	FORGE	ISOLATION
D	V-17-1	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
	V-17-2	10"	GATE	ANCHOR-DARLING	CAST	ISOLATION
E	V-17-3	10"	GATE	VELAN	FORGE	ISOLATION
F	V-17-19	14"	GATE	VELAN	FORGE	ISOLATION
	V-17-54	14"	GATE	VELAN	FORGE	ISOLATION

SYSTEM: RECIRCULATION

GROUP	COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-37-9	26"	GATE	CRANE	CAST	ISOLATION
	V-37-10	26"	GATE	CRANE	CAST	ISOLATION
	V-37-20	26"	GATE	CRANE	CAST	ISOLATION
	V-37-21	26"	GATE	CRANE	CAST	ISOLATION
	V-37-31	26"	GATE	CRANE	CAST	ISOLATION
	V-37-32	26"	GATE	CRANE	CAST	ISOLATION
	V-37-42	26"	GATE	CRANE	CAST	ISOLATION
	V-37-43	26"	GATE	CRANE	CAST	ISOLATION
	V-37-53	26"	GATE	CRANE	CAST	ISOLATION
	V-37-54	26"	GATE	CRANE	CAST	ISOLATION

SYSTEM: FEEDWATER

GROUP	COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-2-35	18"	GATE	CRANE	CAST	ISOLATION
	V-2-36	18"	GATE	CRANE	CAST	ISOLATION
B	V-2-[illegible]	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW
	V-2-72	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW
	V-2-73	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW
	V-2-74	18"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW

TABLE 4-7
CATEGORY B-M-2
CLASS 1 VALVE BODY GROUPING

SYSTEM: CLEAN-UP DEMINERALIZER						
GROUP	COMPONENT NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-16-1 V-16-2 V-16-14 V-16-61 V-16-63	6" 6" 6" 6" 6"	GATE GATE GATE GATE GATE	ANCHOR-DARLING HIRATA ANCHOR-DARLING ANCHOR-DARLING ANCHOR-DARLING	CAST CAST CAST CAST CAST	ISOLATION ISOLATION ISOLATION ISOLATION ISOLATION
B	V-16-133	6"	GATE	VELAN	FORGE	ISOLATION
C	V-16-62	6"	SWGCK	ANCHOR-DARLING	CAST	1-DIR FLOW

SYSTEM: MAIN STEAM						
GROUP	COMP. NO.	SIZE	TYPE	MANUFACTURER	METHOD	FUNCTION
A	V-1-7 V-1-8 V-1-9 V-1-10	24" 24" 24" 24"	GLOBE GLOBE GLOBE GLOBE	ATWOOD-MORRILL ATWOOD-MORRILL ATWOOD-MORRILL ATWOOD-MORRILL	CAST CAST CAST CAST	ISOLATION ISOLATION ISOLATION ISOLATION
B	V-1-160 V-1-161 V-1-162 V-1-163 V-1-164 V-1-165 V-1-166 V-1-167 V-1-168	6" 6" 6" 6" 6" 6" 6" 6" 6"	RELIEF RELIEF RELIEF RELIEF RELIEF RELIEF RELIEF RELIEF RELIEF	CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED	CAST CAST CAST CAST CAST CAST CAST CAST CAST	PRESSURE RELIEF OVERPRESSURE PROTECTION
C	V-1-173 V-1-174 V-1-175 V-1-176 V-1-177	6" 6" 6" 6" 6"	EMRV EMRV EMRV EMRV EMRV	CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED CONSOLIDATED	WELDED WELDED WELDED WELDED WELDED	OVER-PRESSURE PROTECT.

A.2.22

A. AREAS OF EXAMINATION: CATEGORY B-N-1

Reactor Vessel Interior Surfaces

B. APPLICABLE ITEM NUMBERS:

B13.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Accessible Areas	None	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

During normal refueling outages, access is restricted in the areas of the stub tubes and incore instrument housing.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

All accessible areas during the scheduled refueling outage.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination of the reactor vessel interior during normal refueling outages once each period. In addition, GPUN is committed by its operating license to inspect all accessible surfaces and welds of both core spray spargers and repair assemblies at least once per 24 months; this cycle shall occur every refueling outage.

The B-N-1 examination is scheduled for refueling outages 15R, 16R and 18R; however, it is GPUN's intention to use the opportunity to perform Section XI examinations during 14R and 17R while the core spray sparger examinations are performed.

PERIOD	TALLY		OUTAGE
1ST	Sparger, VT-1 Sparger, VT-1	 B13.10, VT-3	14R 15R
2ND	Sparger, VT-1	B13.10, VT-3	16R
3RD	Sparger, VT-1 Sparger, VT-1	 B13.10, VT-3	17R 18R

4.2.23

A. AREAS OF EXAMINATION: CATEGORY B-N-2

Integrally-welded core support structures and interior attachments to reactor vessel.

B. APPLICABLE ITEM NUMBERS:

B13.20, B13.30 & B13.40

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Accessible welds and surfaces	None	Visual (VT-1 & VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

Accessible due to Refueling Schedule.

E. IDENTIFICATION OF AREAS TO BE EXAMINED

See Table 4-8, Category B-N-2.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires visual examinations during each inspection interval of the vessel's interior attachments and core support structures. This examination may be performed at or near the end of the inspection period.

The visual examinations are scheduled for refueling outage 18R, third period. However, GPUN is committed to inspect the Core Spray Sparger every refueling outage and may use the opportunity during other refueling outages to satisfy Section XI, B-N-2 requirements.

PERIOD	TALLY	OUTAGE
1ST	Sparger, VT-1 Sparger, VT-1	14R 15R
2ND	Sparger, VT-1	16R
3RD	Sparger, VT-1 Sparger, VT-1, B13.20-VT-1, B13.30-VT-1 B13.40-VT-3	17R 18R

TABLE 4-8
CATEGORY B-N-2
INTEGRALLY WELDED CORE SUPPORT STRUCTURES
AND INTERIOR ATTACHMENTS TO REACTOR VESSEL

COMPONENT	METHOD
°LOWER CORE PLATE	VT-3
°FUEL SUPPORT PIECES	VT-3
°CONTROL ROD GUIDE TUBES	VT-3
°SHROUD HEAD AND DRYER GUIDE ROD BRACKET TO VESSEL ATTACHMENT WELDS (2)	VT-3
°STEAM DRYER BRACKETS TO VESSEL ATTACHMENT WELDS (4)	VT-3
°TOP GUIDE (UPPER CORE PLATE)	VT-3
°SHROUD	VT-1
°SHROUD TO CONICAL SUPPORT WELD	VT-1
°CONICAL SUPPORT TO VESSEL WELD	VT-3
°CONICAL SUPPORT	VT-3
°CLEVIS ASSEMBLIES (36)	VT-3
°FEEDWATER END BRACKETS (4) AND VESSEL/BRACKET WELDS	VT-1
°SURVEILLANCE SAMPLE HOLDER BRACKET TO VESSEL ATTACHMENT WELD	VT-3

4.2.24

A. AREAS OF EXAMINATION: CATEGORY B-O

Pressure retaining welds in Control Rod Housings

B. APPLICABLE ITEM NUMBERS:

B14.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWB-2500-18[1]	None	Volumetric or Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule. Category B-O.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a volumetric or surface examination to be performed on the welds in 10% of the peripheral Control Rod Drive Housing by the end of the interval. This inspection can be performed at or near the end of the interval.

Each of the 137 CRD Housings has a flange to housing weld. There are 28 CRD Housings on the periphery. Three welds on the Periphery are scheduled for surface examination during refueling outage 18R.

PERIOD	TALLY	OUTAGE
1ST		
2ND		
3RD	(3) B14.10, Surface	18R

NOTE: (1) IWB-2500-18, SECTION XI, 1986 EDITION

A. AREAS OF EXAMINATION: CATEGORY: B-P

System Pressure Test of all Pressure Retaining Components.

B. APPLICABLE ITEM NUMBERS:

B15.10, B15.11, B15.50, B15.51, B15.60, B15.61, B15.70 & B15.71

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWA-5240[1]	None	Visual (VT-2)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The subject areas are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

See F. Below.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a system leakage test each refueling outage and a system hydrostatic test once per interval.

1) The pressure retaining boundary during the system leakage test shall correspond to the reactor coolant system boundary, with all valves in the normal position, which is required for normal reactor operation startup. The VT-2 examination shall, however, extend to and include the second closed valve at the boundary extremity.

2) The pressure retaining boundary during the system hydrostatic test shall include all Class 1 components within the system boundary.

A visual examination for leaks shall be made with the reactor coolant system at pressure during each scheduled refueling outage or after major repairs have been made to the reactor coolant system. A system hydrostatic test shall be scheduled at the end or near the end of the interval.

NOTE: (1) IWA-5240 Section XI, 1986 Edition

CHAPTER 5
CLASS 2 (IWC) INSPECTION PLAN

5.1. INTRODUCTION

Subsection IWC of Section XI specifies that Class 2 components and their supports, except those that are specifically exempted, are subject to examinations. This chapter describes the code required examinations and the program that shall be implemented to meet those requirements.

A summary of those ASME examination categories and item numbers applicable to the Oyster Creek Third Ten Year Inspection Interval is furnished in Table 5-1.

Section 5.2 of this chapter presents the examination requirements for Class 2 components by addressing: each of the applicable examination category listed in Table 5-1, the examination requirements specified in Table IWC-2500-1 from the Section XI Code, and GPUN's plan to satisfy those requirements during the third ten year inspection interval.

Identification of the components scheduled for examination is contained in the Oyster Creek Third Ten Year Schedule, a separate document from this program plan.

5.2 EXAMINATION REQUIREMENTS FOR CLASS 2 COMPONENTS

This section identifies the examinations and tests required for Class 2 systems in the Inservice Inspection Program Update and provides amplifying information on compliance with Table IWC-2500-1.

The components within the ASME Section XI, ISI boundaries as defined and described in Chapter 3 were grouped by component description and matched with the applicable ASME Section XI category and item number. A count of the components by category and item number was made and examinations were scheduled based on the Code selection criteria for IWC.

This section is organized by the Class 2 Examination Categories specified in Table IWC-2500-1, and describes the program compliance by referencing the Code requirements, identifying the type of components to be examined, defining the examination method to be used along with the frequency of examinations for completing the interval, and relief requests if they apply.

Table 5-1
CLASS 2 EXAMINATION CATEGORIES AND ITEM NUMBERS
APPLICABLE TO THIS PROGRAM UPDATE

EXAMINATION CATEGORY	ITEM NUMBER	PART EXAMINED
C-A	C1.10	PRESSURE VESSEL SHELL CIRCUMFERENTIAL WELDS
C-A	C1.40	PRESSURE VESSEL TUBESHEET TO HEAD WELDS
C-B	C2.21	PRESSURE VESSEL NOZZLE TO SHELL WELD
C-B	C2.22	PRESSURE VESSEL NOZZLE INNER RADIUS
C-B	C2.31	PRESSURE VESSEL REINFORCING PLATE WELDS TO NOZZLE AND VESSEL
C-B	C2.33	PRESSURE VESSEL NOZZLE TO SHELL WELDS WHEN INSIDE OF VESSEL IS INACCESSIBLE
C-C	C3.20	INTEGRAL ATTACHMENTS FOR PIPING
C-C	C3.30	INTEGRAL ATTACHMENTS FOR PUMPS
C-D	C4.20	PRESSURE RETAINING BOLTING > 2" DIAMETER PIPING
C-F-1	C5.11	PIPING CIRCUMFERENTIAL WELDS $\geq$ 3/8". NOMINAL WALL THICKNESS AND > 4" NPS.
C-F-1	C5.12	PIPING LONGITUDINAL WELDS $\geq$ 3/8" NOMINAL WALL THICKNESS AND > 4" NPS.
C-F-1	C5.30	PIPING SOCKET WELDS
C-F-1	C5.41	PIPING BRANCH CONNECTION CIRCUMFERENTIAL WELDS (GREATER THAN 4").
C-F-2	C5.51	PIPING CIRCUMFERENTIAL WELDS $\geq$ 3/8". NOMINAL WALL THICKNESS AND > 4" NPS.
C-F-2	C5.52	PIPING LONGITUDINAL WELDS $\geq$ 3/8" NOMINAL WALL THICKNESS AND > 4" NPS.
C-F-2	C5.81	PIPE BRANCH CONNECTION CIRCUMFERENTIAL WELDS
C-G	NA	NOT APPLICABLE
C-H	SYSTEMS	PRESSURE TESTING

5.2.1

A. AREAS OF EXAMINATION: CATEGORY C-A

Pressure Retaining Welds in Pressure Vessels
(Shell Circumferential Weld)

B. APPLICABLE ITEM NUMBERS:

C1.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-1[1]	None	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for this examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Containment Spray Heat Exchangers (4)

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

There are 4 circumferential shell welds in each of the 4 Containment Spray Heat Exchangers. Two of the 4 welds in each heat exchanger are shell to flange weld.

Section XI requires a volumetric examination of at least two of the shell to flange welds from one heat exchanger or distributed among the four heat exchangers by the end of the interval. Two (2) welds have been scheduled for examination as follows:

PERIOD	TALLY	OUTAGE
1ST	(1) C1.10, Volumetric	14R
2ND		
3RD	(1) C1.10, Volumetric	18R

NOTE: (1) FIGURE IWC-2500-1, SECTION XI, 1986 EDITION

5.2.2

A. AREAS OF EXAMINATION: CATEGORY C-A

Pressure Retaining Welds in Pressure Vessels
(Isolation Condenser Tubesheet to Head Welds)

B. APPLICABLE ITEM NUMBERS:

C1.40 (This item number was created by GPUN)

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. 5-1	None	Volumetric

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Isolation Condenser A and B.

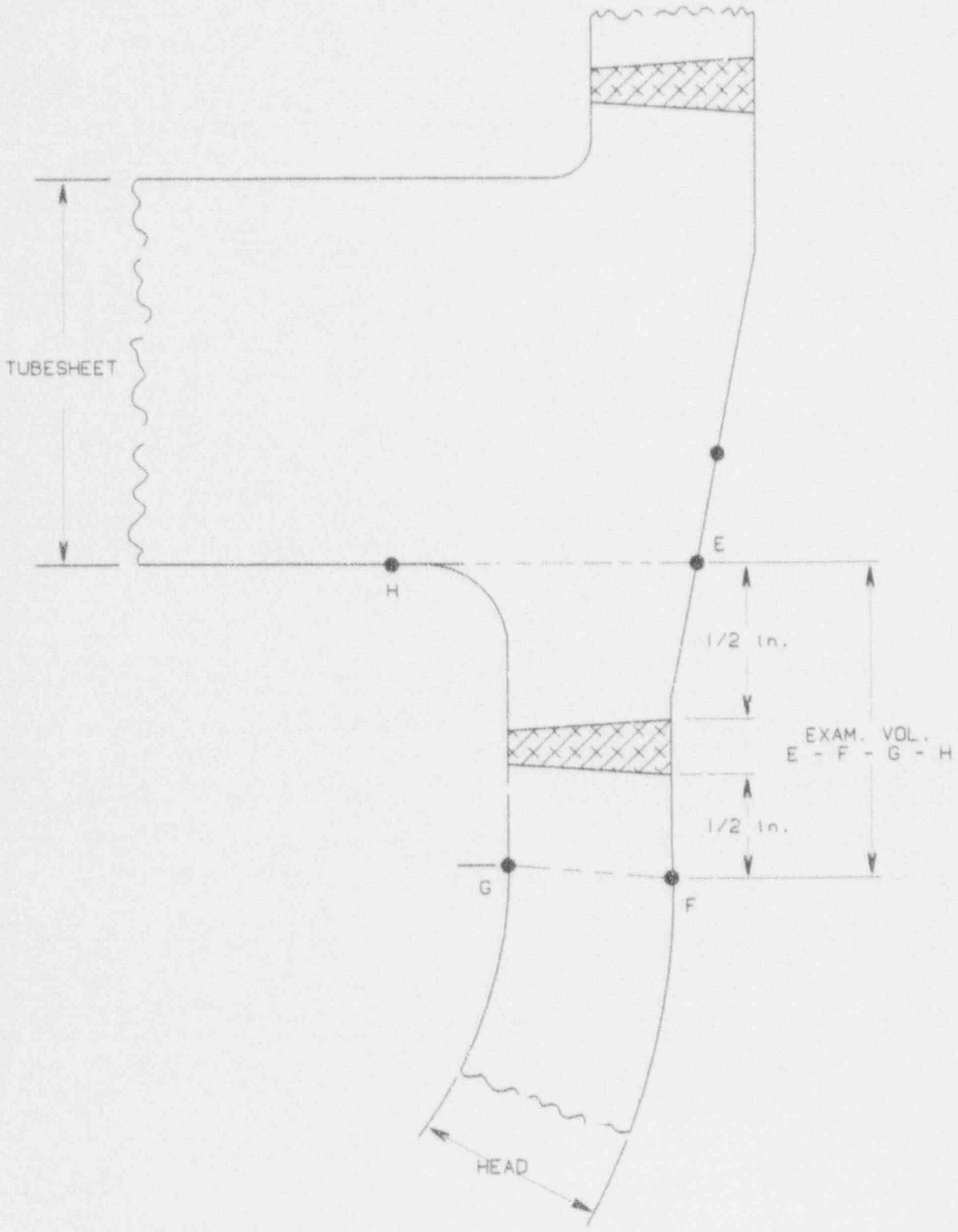
F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

There are 4 tubesheet to head welds in each of the 2 Isolation Condensers. Section XI requires a volumetric examination of at least 4 welds on one Condenser or distributed between the two condensers by the end of the interval. Four welds have been scheduled for UT examination as follows:

PERIOD	TALLY	OUTAGE
1ST	(2) C1.40, Volumetric	15R
2ND		
3RD	(2) C1.40, Volumetric	17R

FIG.5-1

TYPICAL TUBESHEET-TO-HEAD WELD JOINTS



5.2.3

A. AREAS OF EXAMINATION: CATEGORY C-B

Pressure Retaining Nozzle Welds in Vessels
(Nozzles without Reinforcing Plate)

B. APPLICABLE ITEM NUMBERS:

C2.21 & C2.22

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-4(b)[1]	None	Volumetric & Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED

Isolation Condensers A and B.

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

There are 4 Nozzle to-Head Welds in each of the 2 Isolation Condensers. Section XI requires a volumetric and surface examination of the nozzle to head weld and a volumetric examination of the nozzle inside radius section of at least 4 nozzles from one Isolation Condenser or distributed between the two Isolation Condenser by the end of the interval. Four nozzles have been scheduled for examination as follows:

PERIOD	TALLY	OUTAGE
1ST	(2) C2.21, Vol.& Sur. (2) C2.22, Vol.	15R
2ND		
3RD	(2) C2.21, Vol.& Sur. (2) C2.22, Vol.	17R

NOTE: (1) FIGURE IWC-2500-4(b), SECTION XI 1986 EDITION

5.2.4

A. AREAS OF EXAMINATION: CATEGORY C-B

Pressure Retaining Nozzle Welds in Vessels
(Nozzles with Reinforcing Plate)

B. APPLICABLE ITEM NUMBERS:

C2.31 & C2.33

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-4(c)[1]	None	Surface and Visual (VT-2)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest is accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Containment Spray Heat Exchangers (4)

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

There are 2 nozzle to shell welds with reinforcing plates in each of the 4 Containment Spray Heat Exchangers.

Section XI requires a surface and a visual examination for leakage of at least 2 nozzles from one heat exchanger or distributed among the four heat exchangers by the end of the interval. Two nozzles have been scheduled for surface examination and all eight nozzles have been scheduled for VT-2 examination as follows:

PERIOD	TALLY		OUTAGE
1ST	(1) C2.31, Sur.	(8) C2.33, VT-2	14R
2ND		(8) C2.33, VT-2	16R
3RD	(1) C2.31, Sur.	(8) C2.33, VT-2	18R

NOTE: (1) FIGURE IWC-2500-4(C), SECTION XI 1986 EDITION

5.2.5

A. AREAS OF EXAMINATION: CATEGORY C-C

Integral Attachment for Piping

B. APPLICABLE ITEM NUMBERS:

C3.20 and C3.30

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-5[1]	None	Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category C-C

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires surface examination on integrally welded attachments where the attachment base material thickness is 3/4" or greater.

Eighty-five integrally welded attachments to pipes are within the scope of this examination category. Two of the pipe attachments are confirmed to have base material thickness of 3/4" or greater. The remaining 83 pipe attachments will be field verified or verified by design review for base material thickness.

The verifications shall be completed by the end of the interval. The 83 pipe attachments are assigned item number C3.21 to indicate verification (VER) examinati and are scheduled on a balance frequency in the interval. A surface examination shall be performed on the attachments verified to have base material thickness of 3/4" or greater and the item number C3.20 shall be re-assigned for final documentation.

PERIOD	TALLY			OUTAGE
1ST	(1) C3.20, Sur	(17) C3.21, VER (17) C3.21, VER	(2) C3.30, VER (2) C3.30, VER	14R 15R
2ND	(1) C3.20, Sur	(17) C3.21, VER	(2) C3.30, VER	16R
3RD		(17) C3.21, VER (15) C3.21, VER	(3) C3.30, VER (3) C3.30, VER	17R 18R

NOTE: (1) FIGURE IWC-2500-5, SECTION XI 1986 EDITION

5.2.6

A. AREAS OF EXAMINATION: CATEGORY C-D
Pressure retaining bolting greater than 2" in diameter (piping).

B. APPLICABLE ITEM NUMBERS:

C4.20

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-6[1]	NONE	VOLUMETRIC

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The component is accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Feedwater Flow Element Bolting

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires volumetric examinations be performed on 100% of the bolts and studs greater than 2" in diameter, by the end of the interval. The examination may be performed while the bolting is in place under load or upon disassembly of the connection.

This requirement applies to two flange connections that tie in the Feedwater Flow Element. The volumetric examinations are scheduled for refueling outage 17R.

NOTE: (1) FIGURE IWC-2500-6, SECTION XI 1986 EDITION

5.2.7

A. AREAS OF EXAMINATION: CATEGORY C-F-1

Pressure retaining welds in Austenitic Stainless Steel or High Alloy Piping

B. APPLICABLE ITEM NUMBERS:

C5.11, C5.12, C5.20 and (C5.41-greater than 4" only).

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-7[1] IWC-2500-9 to 13[1]	None	Volumetric and/or Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

See Oyster Creek Third Ten Year Schedule, Category C-F-1

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category C-F-1

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires: 1) a volumetric and surface examination on circumferential and longitudinal pipe welds where the diameters are greater than 4" and the nominal wall thickness is $\geq$ 3/8" 2) a surface examination on socket welds; 3) a surface examination on pipe branch connection, circumferential welds. The welds selected for examination shall include 7.5%, but not less than 28 welds from the population of C-F-1 and shall be examinations by the end of the interval. There are a total of 77 welds in this examination category. The calculation of 7.5% yields less than the minimum 28. GPUN has scheduled the minimum 28 welds for this inspection interval. See Table 5-2, Category C-F-1 for the selection criteria, the distribution among the systems and item numbers.

PERIOD	TALLY	OUTAGE
1ST	(4) C5.11, Vol. & Sur. (5) C5.11, Vol. & Sur.	14R 15R
2ND	(6) C5.11, Vol. & Sur.	16R
3RD	(7) C5.11, Vol.& Sur. (5) C5.11, Vol.& Sur. (1) C5.12, Vol.& Sur.	17R 18R

NOTE: (1) FIGURES IWC-2500-7, IWC-2500-9, IWC-2500-10, IWC-2500-11, IWC-2500-12 AND IWC-2500-13, SECTION XI 1986 EDITION

TABLE 5-2
CATEGORY C-F-1
PRESSURE RETAINING WELDS IN AUSTENITIC
STAINLESS STEEL OR HIGH ALLOY PIPING

SYSTEM	ITEM NUMBERS					TOTAL NO. OF C-F-1 WELDS ELIGIBLE FOR EXAM	% OF ELIGIBLE WELDS IN CONTRI-BUTION	NO. OF WELDS SCHEDULED FOR EXAMINATION		
								TOTAL	BY ITEM NO.	
	C5.11	C5.12	C5.30	C5.41	TOTAL				C5.11	C5.12
ISOLATION CONDENSER	64	0	0	0	64	64	83.1	23	23	0
CORE SPRAY	12	1	0	0	13	13	16.9	5	4	1
TOTALS	76	1	0	0	77[1]	77[2]	100	28[3]	27	1

NOTES:
1 - THE POPULATION FROM WHICH THE 7.5% SAMPLE IS OBTAINED.
2 - CANDIDATES FOR EXAMINATIONS EXCLUDING COMPONENTS THAT HAVE A NOMINAL WALL THICKNESS LESS THAN 0.375" AND NPS GREATER THAN 4".
3 - MINIMUM REQUIRED EXAMINATIONS BY END OF INTERVAL.

5.2.8

A. AREAS OF EXAMINATION: CATEGORY C-F-2

Pressure retaining welds in carbon or low alloy steel piping.

B. APPLICABLE ITEM NUMBERS:

C5.51, C5.52 & (C5.81 - greater than 4" only).

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWC-2500-7[1] IWC-2500-9 to 13[1]	None	Volumetric and/or Surface

D. ACCESSIBILITY OR OTHER LIMITATIONS:

See Oyster Creek Third Ten Year Schedule, Category C-F-2

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category C-F-2

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires: 1) a volumetric and surface examination on circumferential and longitudinal pipe welds where the diameters are greater than 4" and the nominal wall thickness is $\geq$ 3/8" (C5.51 and C5.52), 2) a surface examination on pipe branch connection, circumferential welds (C5.81). The welds selected for examination shall include 7.5%, but not less than 28 welds from the population of non-exempt C-F-2 category, and shall be examined by the end of the interval.

See Table 5-3, Category C-F-2 for the selection criteria, the distribution among the systems and item numbers.

There are a total of 779 welds in this examination category. The calculation of 7.5% yields 58.425. GPUN is scheduling 58 welds for this inspection interval.

Welds in the Core Spray System that are excluded from examination by Section XI criteria (piping less than 3/8" nominal wall thickness and a NPS greater than 4") shall be examined under an augmented schedule.

PERIOD	TALLY	OUTAGE
1ST	(11)C5.51 (6)C5.51	14R 15R
2ND	(13)C5.51 (1)C5.52 (1)C5.81	16R
3RD	(12)C5.51 (1)C5.52 (13)C5.51	17R 18R

NOTE: (1) FIGURES IWC-2500-7, IWC-2500-9, IWC-2500-10, IWC-2500-11, IWC-2500-12 AND IWC-2500-13, SECTION XI 1986 EDITION

TABLE 5-3
CATEGORY C-F-2
PRESSURE RETAINING WELDS IN CARBON
OR LOW ALLOY STEEL PIPING

SYSTEM	ITEM NUMBERS						TOTAL NO. OF C-F-2 WELDS ELIGI-BLE FOR EXAM	% OF ELIGI-BLE WELDS IN CONTRI-BUTION	NO. OF WELDS SCHEDULED FOR EXAMINATION			
	C5.51	C5.52	C5.53[4]	C5.81	C5.83[4]	TOTAL			TOTAL	BY ITEM NO.		
										C5.51	C5.52	C5.81
CORE SPRAY	85	1	260	0	3	349	86	20	12	11	1	0
SCRAM DISCHARGE	48	1	0	0	0	49	49	12	7	6	1	0
CONTAINMENT SPRAY	231	0	68	0	2	301	231	55	31	31	0	0
FEEDWATER	52	0	0	2	0	54	54	13	8	7	0	1
DEMIN WATER TRANSFER	0	0	2	0	0	2	0	0	0	0	0	0
RX. BLDG. CLOSED COOLING	0	0	24	0	0	24	0	0	0	0	0	0
TOTALS	416	2	354	2	5	779[1]	420[2]	100	58[3]	55	2	1

NOTES: (1) THE POPULATION FROM WHICH THE 7.5% SAMPLE IS OBTAINED.
(2) CANDIDATES FOR EXAMINATIONS EXCLUDING COMPONENTS THAT HAVE A NOMINAL WALL THICKNESS LESS THAN 0.375 INCH AND NPS GREATER THAN 4 INCH.
(3) MINIMUM REQUIRED EXAMINATION BY END OF INTERVAL.
(4) CREATED ITEM NUMBER TO IDENTIFY EXCLUDED COMPONENTS.

5.2.9

A. AREAS OF EXAMINATION: CATEGORY C-H

System pressure test of all pressure retaining components.

B. APPLICABLE ITEM NUMBERS:

C7.10, C7.20 & C7.30, C7.40, C7.50, C7.60, C7.70 & C7.80

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
IWA-5240[1]	None	Visual (VT-2)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination for leaks each inspection period in accordance with IWC-5221 and each inspection interval in accordance with IWC-5222. Pressure tests and VT-2 shall be performed on all Class 2 pressure retaining components at least once per inspection period. System hydrostatic test and VT-2 shall be performed on all Class 2 pressure retaining components at least once during the inspection interval.

NOTE: (1) PARAGRAPH IWA-5240, SECTION XI 1986 EDITION

CHAPTER 6
CLASS 3 (IWD) INSPECTION PLAN

6.1 INTRODUCTION

Subsection IWD of Section XI specifies that Class 3 pressure retaining components and their integral attachments, except those that are specifically exempted, are subject to examinations. This chapter describes the Code-required examinations and the program that shall be implemented to meet those requirements.

A summary of those ASME examination categories and item numbers applicable to the Oyster Creek Third Ten Year Inspection Interval is furnished in Table 6-1.

Section 6.2 of this chapter presents the examination requirements for Class 3 components by addressing: each of the applicable examination categories listed in Table 6-1, the examination requirements specified in Table IWD-2500-1 from the Section XI Code, and GPUN's plan to satisfy those requirements during the Third Ten Year Interval.

Identification of the components scheduled for examination is contained in the Oyster Creek Third Ten Year Schedule, a separate document from this program plan.

6.2 EXAMINATION REQUIREMENTS FOR CLASS 3 COMPONENTS

This section identifies the examinations and tests for non-exempted components within the Class 3 piping boundaries as defined in the ISI boundary drawings and identified in Chapter 3. A review of the pipe support detail sketches was used for determining if the support was integrally welded to the pressure retaining boundary. Finally, the item numbers were assigned for integral attachments based on their description.

In the cases where a conclusive determination could not be made as to whether an attachment was integrally welded to the pressure boundary, the component was assigned the classification "Unknown". A conclusive verification of each unknown case shall be completed by the end of the interval.

This section is organized by the Class 3 Examination Categories specified in Table IWD-2500-1, and describes the program compliance by referencing the Code requirements, identifying the type of components to be examined, defining the examination method to be used along with the frequency of examinations for completing the interval, and relief requests if they apply.

TABLE 6-1
CLASS 3 EXAMINATION CATEGORIES AND ITEM
NUMBERS APPLICABLE TO THIS PROGRAM UPDATE

EXAMINATION CATEGORY	EXAMINATION ITEM NO.	PARTS EXAMINED
D-B	D2.10	PRESSURE TESTING
D-B	D2.20	INTEGRAL ATTACHMENT - COMPONENT SUPPORTS AND RESTRAINTS
D-B	D2.40	INTEGRAL ATTACHMENT - SPRING TYPE SUPPORT
D-C	D3.10	PRESSURE TESTING
D-C	D3.20	INTEGRAL ATTACHMENT - COMPONENT SUPPORTS AND RESTRAINTS
D-C	D3.30	INTEGRAL ATTACHMENT - MECHANICAL AND HYDRAULIC SNUBBER

6.2.1

A. AREAS OF EXAMINATION: CATEGORY D-B

Systems in support of Emergency Core Cooling, Containment Heat Removal, Atmosphere Cleanup and Reactor Residual Heat Removal (Pressure Testing)

B. APPLICABLE ITEM NUMBERS:

D2.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
IWA-5240[1]	None	Visual (VT-2)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

ISI System Boundary Drawings

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a pressure test and a visual examination (VT-2) for leaks to be performed on all components at least once each inspection period and a hydrostatic test at least once each interval.

The Class 3 systems under this examination category are in service during normal plant operations and shall be VT-2 examined once each period.

Each system shall be VT-2 examined during a hydrostatic test during the interval.

NOTE: (1) PARAGRAPH IWA-5240, SECTION XI 1986 EDITION

6.2.2

A. AREAS OF EXAMINATION: CATEGORY D-B
Systems in support of Emergency Core Cooling, Containment Heat Removal, Atmosphere Cleanup and Reactor Residual Heat Removal (Integral Attachment Component Support & Restraints)

B. APPLICABLE ITEM NUMBERS:
D2.20 & D2.40

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWD-2500-1[1]	None	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

See Oyster Creek Third Ten Year Schedule, Category D-B

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule, Category D-B

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination (VT-3) of all integrally attached supports and, in the case of multiple components within a system of similar design, function and service, the integral attachment of only one of the multiple components shall be examined. The extent of examinations shall be completed by the end of the interval.

This requirement applies to 68 classified supports and 17 unknown (UNK) supports within 5 Class 3 inspection boundaries (See Table 6-2). There are 21 supports on components other than piping and by applying the multiple component rule the scope reduced to 10 examinations by the end of the interval.

Seventy-four examinations are scheduled, 47 pipe supports, 10 component Supports, and 17 UNK supports.

PERIOD	TALLY				OUTAGE
	COMPONENT	PIPING		UNKNOWN	
1ST	(3)D2.20,VT-3 (1)D2.20,VT-3	(4)D2.20,VT-3 (6)D2.20,VT-3	(3) D2.40,VT-3 (2) D2.40,VT-3	(6)UNK,VER	14R 15R
2ND	(2)D2.20,VT-3	(8)D2.20.VT-3	(2) D2.40,VT-3	(5)UNK,VER	16R
3RD	(2)D2.20,VT-3 (2)D2.20,VT-3	(6)D2.20,VT-3 (8)D2.20,VT-3	(4) D2.40,VT-3 (3) D2.40,VT-3	(6)UNK,VER	17R 18R

NOTE: (1) FIGURE IWD-2500-1, SECTION XI 1986 EDITION

TABLE 6-2
CATEGORY D-B
INTEGRAL ATTACHMENTS ON CLASS 3
COMPONENTS AND PIPING

SYSTEM	ITEMS IN SCOPE	TOTALS SUPPORTS
ISOLATION CONDENSER	(2) CONDENSERS - 3 SUPPORTS EACH	6
CONDENSATE TRANSFER	(1) CONDENSATE STORAGE TANK (2) PUMPS - 1 SUPPORT EACH	1 2
SERVICE WATER	(2) PUMPS - 1 SUPPORT EACH	2
EMER. SERV. WATER	(4) PUMPS - 1 SUPPORT EACH PIPING - 11 SUPPORTS	4 11
REACTOR BLDG. CLOSE COOLING	(2) HEAT EXCHANGER - 2 SUPPORTS EACH (2) PUMPS - 1 SUPPORT EACH PIPING - 36 SUPPORTS	4 2 36

6.3.3

A. AREAS OF EXAMINATION: CATEGORY D-C

Systems in support of Residual Heat from Spent Fuel Storage Pool (Pressure Test)

B. APPLICABLE ITEM NUMBERS:

D3.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
IWA-5240[1]	None	Visual (VT-2)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

ISI System Boundary Drawings

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a pressure test and a visual examination (VT-2) for leaks to be performed on all components at least once each inspection period and a hydrostatic test at least once each interval.

The Class 3 system under this examination category is in service during normal plant operations and shall be VT-2 examined once each period.

The system shall be VT-2 examined during a hydrostatic test during the interval.

NOTE: (1) PARAGRAPH IWA-5240, SECTION XI, 1986 EDITION

6.3.4

A. AREAS OF EXAMINATION: CATEGORY D-C

Systems in support of Residual Heat from Spent Fuel Storage Pool (Integral attachment component support & restraint)

B. APPLICABLE ITEM NUMBERS:

D3.20 and D3.30

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWD-2500[1]	None	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

See Oyster Creek Third Ten Year Schedule Category D-C

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule Category D-C

F. EXAMINATION METHOD AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination (VT-3) of all integrally attached supports and in the case of multiple components within a system of similar design, function and service the integral attachment of only one of the multiple components shall be examined. The extent of examinations shall be completed by the end of the interval.

This requirement applies to 17 classified supports and 1 unknown (UNK) support on 1 system. Fuel Pool Cooling which consists of 3 heat exchangers, two support each, 4 pumps, one support each and 7 piping supports. There are 10 supports on components other than piping and by applying the multiple component rule the scope to 8 examinations by the end of the interval reduced.

Sixteen examinations are scheduled, 7 pipe supports, 8 component supports, and 1 UNK support.

PERIOD	TALLY			OUTAGE
	COMPONENT	PIPING	UNKNOWN	
1ST	(2)D3.20,VT-3	(2)D3.20,VT-3		15R
2ND	(2)D2.20,VT-3	(2)D3.20,VT-3	(1) UNK	16R
3RD	(2)D3.20,VT-3 (2)D3.20,VT-3	(2)D3.20,VT-3 (1)D3.30,VT-3		17R 18R

CHAPTER 7
COMPONENTS SUPPORT (IWF) INSPECTION PLAN

7.1 INTRODUCTION

Subsection IWF of Section XI specifies that Class 1, 2 and 3 component supports (e.g., piping supports and supports other than piping supports), except those that are specifically exempted, are subject to examinations. This chapter describes the Code-required examination and the program that shall be implemented to meet those requirements. The criteria used for selecting component supports was based on the requirements taken from subsection IWF of Section XI, 1989 edition with the 1990 audenda. Our justification for applying these rules is provided in Relief Request number R6. A summary of those section XI examination categories and item numbers applicable to the Oyster Creek Third Ten Year Inspection Interval is furnished in Table 7-1.

Section 7.2 of this chapter deals with each of the applicable IWF examination category-item numbers listed in Table 7-1. This section also describes the method used for selecting component supports for examination, the examination method that shall be applied and GPUN's plan for satisfying the requirements during the Third Ten Year Inspection Interval. The subsections are in sequence to coincide with the applicable Section XI categories and item numbers identified in Table 7-1 and are organized in a format that presents: a reference to the Code requirements, identify the type of components to be examined, defines the examination method to be used, the frequency of examinations for completing the interval, and relief requests if applicable.

Identification of the specific components scheduled for examination is contained in the Oyster Creek Third Ten Year Schedule, a separate document from this program plan.

7.2 Examination Requirements for Component Supports

This section identifies the examinations for non-exempted component supports within the section XI Class 1, 2 and 3 piping boundaries. The class boundaries are defined in the ISI Boundary Drawings and identified in Chapter 3 of this program update. A review of each pipe support detail sketch was performed in order to determine the type (e.g., variable spring, rod hanger, or snubber) of component support. In the cases where a conclusive determination could not be made the component support was labelled unknown. A verification for every unknown type shall be performed during the interval. The determination for classifying its type may be satisfied by a field verification or design review.

Section XI requires the item numbers shall be categorized to identify support types by component support function.

The selection of component supports for examinations during the third interval was based on the components configuration type. The GPUN ISI data base is computerized and has a field for entering component type. The system allows GPUN to sort and make selections on component type for all components in the computerized data base. A list of the types within the scope of this program is contained in Table 7-2.

TABLE 7-1
COMPONENT SUPPORT EXAMINATION CATEGORIES
AND ITEM NUMBERS APPLICABLE TO THE
PROGRAM UPDATE

EXAMINATION CATEGORY	EXAMINATION ITEM NUMBER	PARTS EXAMINED
F-A	F1.10	CLASS 1 PIPING SUPPORTS
F-A	F1.20	CLASS 2 PIPING SUPPORTS
F-A	F1.30	CLASS 3 PIPING SUPPORTS
F-A	F1.40	SUPPORTS OTHER THAN PIPING SUPPORTS CLASS 1, 2 AND 3.

TABLE 7-2
CONFIGURATION TYPE REFEREN

I	ANCHOR	VI	LUG	XI	SLIDE
II	BRACKET	VII	RIGID RESTRAINT	XII	STANCHION
III	CLAMP	VIII	ROD HANGER	XIII	SWAYBRACE
IV	CONSTANT	IX	SNUBBER HYDRAULIC	XIV	U-BOLT
V	FRAME	X	SNUBBER MECHANICAL	XV	VARIABLE SPRING

7.2.1

A. AREAS OF EXAMINATION: CATEGORY F-A

Piping Supports Class 1

B. APPLICABLE ITEM NUMBERS:

F1.10

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWF-1300-1[1]	Rt	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule Category F-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination (VT-3) of at least 25% of the Class 1 piping support by the end of the interval.

The total percentage sample shall be comprised of supports from each system, where the individual sample sizes are proportional to the total number of non-exempt supports of each type and function within each system.

From a total of 225 Class 1 piping supports 67 examinations (29%) have been scheduled for the third interval. Ten systems and 10 different configuration types are represented by this sample. See Table 7-3.

PERIOD	TALLY		OUTAGE
1ST	(8) F1.10, VT-3 (12) F1.10, VT-3	(1) UNK, VER. (1) UNK, VER.	14R 15R
2ND	(14) F1.10, VT-3	(1) UNK, VER.	16R
3RD	(14) F1.10, VT-3 (13) F1.10, VT-3	(1) UNK, VER. (2) UNK, VER.	17R 18R

NOTE: (1) Figure IWF-1300-1, Section XI, 1990 Addenda

TABLE 7-3
CATEGORY F-A, ITEM NO. F1.10
CLASS 1 PIPING SUPPORTS

SYSTEM	COMPONENT SUPPORT TYPE[1,2]										UNK[3]	TOTAL	25%	SCHED -ULED
	III	IV	V	VII	IX	X	XI	XIII	XIV	XV				
ISOLATION CONDENSER			$^{1}_{2}$		$^{1}_{4}$	$^{3}_{13}$				$^{2}_{9}$		28	7	7
CORE SPRAY					$^{1}_{2}$	$^{2}_{6}$				$^{2}_{6}$		14	3.5	5
LIQUID POISON			$^{1}_{5}$						$^{2}_{6}$	$^{1}_{4}$		15	3.75	4
CLEANUP				1	$^{3}_{10}$	$^{2}_{6}$	$^{1}_{1}$			$^{4}_{15}$		33	8.25	10
SHUTDOWN COOLING			$^{1}_{4}$	1		$^{1}_{4}$				$^{2}_{8}$		17	4.25	4
RX. HEAD COOLING										$^{1}_{2}$	$^{5}_{5}$	7	1.75	6
RECIRCULATION		$^{5}_{20}$						$^{5}_{20}$				40	10	10
CONTROL ROD DRIVE RETURN	$^{1}_{3}$		$^{1}_{2}$	$^{1}_{3}$						$^{3}_{10}$		18	4.5	6
MAIN STEAM						$^{4}_{14}$				$^{2}_{8}$	$^{1}_{1}$	23	5.75	7
FEEDWATER	$^{1}_{2}$					$^{4}_{16}$				$^{3}_{12}$		30	7.5	8
TOTAL	5	20	13	5	16	59	2	20	6	74	6	225	56.25	67
25%	1.25	5	3.25	1.25	4	14.75	0.25	5	1.5	18.5	1.5	56.25		
SCHEDULED	2	5	4	1	5	16	1	5	2	20	6	67		

NOTE: (1) FOR ROMAN NUMERAL CROSS REFERENCE COMPONENT SUPPORT TYPE, SEE TABLE 7-2
(2) $^{n}_{N}$ WHERE N = TOTAL NUMBER OF COMPONENTS OF THAT TYPE IN THE SYSTEM, n=QUANTITY OF COMPONENTS OF THAT TYPE IN THE SYSTEM SCHEDULED FOR EXAMINATION.
(3) UNK = UNKNOWN TYPE

7.2.2

A. AREAS OF EXAMINATION: CATEGORY F-A

Piping Support Class 2

B. APPLICABLE ITEM NUMBERS:

F1.20

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWF-1300-1[1]	R6	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule Category F-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination (VT-3) of at least 15% of the Class 2 piping supports by the end of the interval. The total percentage sample shall be comprised of supports from each system where the individual sample sizes are proportional to the total number of non-exempt supports of each type and function within each system.

From a total of 368 Class 2 piping supports, 69 examinations (18.75%) have been scheduled for the third interval. Seven systems and 14 different configuration types are represented by this sample. See Table 7-4. GPUN has scheduled the 69 Class 2 piping supports as follows:

PERIOD	TALLY		OUTAGE
1ST	(7) F1.20, VT-3 (11) F1.20, VT-3	(2) UNK, VER. (2) UNK, VER.	14R 15R
2ND	(11) F1.20, VT-3	(4) UNK, VER.	16R
3RD	(14) F1.20, VT-3 (14) F1.20, VT-3	(2) UNK, VER. (2) UNK, VER.	17R 18R

NOTE: (1) FIGURE IWF-1300-1 SECTION XI, 1990 ADDENDA

TABLE 7-4
CATEGORY F-A, ITEM NO. F1.20
CLASS 2 PIPING SUPPORTS

SYSTEM	COMPONENT SUPPORT TYPE[1,2]														UNK[3]	TOTAL	15%	SCHD.
	I	II	III	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV				
ISO. COND.								$^{4}_{25}$		1				$^{3}_{20}$		46	7	7
CORE SPRAY	1	1	2	$^{2}_{11}$	1	$^{1}_{4}$	$^{1}_{7}$	$^{4}_{25}$		$^{2}_{11}$	$^{1}_{2}$		$^{1}_{4}$	$^{8}_{56}$	$^{2}_{2}$	127	19	22
SCRAM DISCHARGE VOL.				$^{1}_{4}$	$^{1}_{3}$	$^{2}_{10}$	$^{1}_{4}$						2	1		24	3.6	5
CONTAINMENT SPRAY		$^{1}_{7}$	$^{1}_{5}$	$^{1}_{9}$		2	$^{4}_{24}$	$^{4}_{28}$	$^{1}_{1}$	$^{4}_{28}$		$^{1}_{1}$		$^{5}_{36}$		141	21	22
FEED-WATER						2	3						1	$^{1}_{4}$	$^{8}_{8}$	18	2.7	9
CLOSED COOLING	$^{1}_{1}$		2	1		2	1							2		9	1.3	1
DW FLOOR EQUIP. DRAIN													$^{1}_{1}$		$^{2}_{2}$	3	0.4	3
TOTAL	2	8	9	25	4	20	39	78	1	40	2	1	8	119	12	368	55	69
15%	0.3	1.2	1.35	3.75	0.6	3	5.85	11.7	0.15	6	0.3	0.15	1.2	17.85	1.8	55.2		
SCHED-ULED	1	1	1	4	1	3	6	12	1	6	1	1	2	17	12	69		

NOTE: (1) FOR ROMAN NUMERAL CROSS REFERENCE COMPONENT SUPPORT TYPE, SEE TABLE 7-2.
(2) $^{n}_{N}$ WHERE N = TOTAL NUMBER OF COMPONENTS OF THAT TYPE IN THE SYSTEM,
n = QUANTITY OF COMPONENTS OF THAT TYPE IN THE SYSTEM SCHEDULED FOR EXAMINATION.
(3) UNK = UNKNOWN TYPE

7.2.3

A. AREAS OF EXAMINATION: CATEGORY F-A

Piping support Class 3

B. APPLICABLE ITEM NUMBERS:

F1.30

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWF-1300-1	R6	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule Category F-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED

Section XI requires a visual examination (VT-3) of at least 10% of the Class 3 piping supports by the end of the interval. The total percentage sample shall be comprised of supports from each system where the individual sample sizes are proportional to the total number of non-exempt supports of each type and function within each system.

From a total of 227 Class 3 piping supports, 43 examinations (18.9%) have been scheduled for the third interval. Five systems and 12 different configuration types are represented by this sample. See Table 7-5. GPUN has scheduled the 43 Class 3 piping supports as follows:

PERIOD	TALLY		OUTAGE
1ST	(8) F1.30, VT-3	(6) UNK, VER.	14R
2ND	(4) F1.30, VT-3	(6) UNK, VER.	16R
3RD	(13) F1.30, VT-3	(6) UNK, VER.	17R

NOTE: (1) FIGURE IWF-1300-1, SECTION XI 1990 ADDENDA

TABLE 7.5
CATEGORY F-A, ITEM NO. F1.30
CLASS 3 PIPING SUPPORTS

SYSTEM	COMPONENT SUPPORT TYPE[1,2]												UNK[3]	TOTAL	10%	SCHEDULED
	I	II	III	V	VII	VIII	X	XI	XII	XIII	XIV	XV				
FUEL POOL COOLING	1		1		4	$^{2}21$	$^{1}1$				$^{1}5$	3	1	37	3.7	5
CONDENSATE TRANSFER					1	$^{1}7$			$^{1}12$		3			23	2.3	2
SERVICE WATER													$^{17}17$	17	1.7	17
EMERGENCY SERVICE WATER	$^{1}3$	$^{1}4$	$^{1}1$	$^{2}18$	4	$^{2}23$		$^{1}8$	$^{1}4$		$^{1}6$	$^{1}7$		78	7.8	11
RX. CLOSED COOLING				3	$^{1}4$	$^{3}32$		1		$^{1}1$	$^{1}9$	$^{2}22$		72	7.2	8
TOTAL	4	4	2	21	13	83	1	9	16	1	23	32	18	227	22.7	43
10%	0.4	0.4	0.2	2.1	1.3	8.3	0.1	0.9	1.6	0.1	2.3	3.2	1.8	22.7		
SCHEDULED	1	1	1	2	1	8	1	1	2	1	3	3	18	43		

NOTE: (1) FOR ROMAN NUMERAL CROSS REFERENCE COMPONENT SUPPORT TYPE, SEE TABLE 7-2
(2) ^{n}N WHERE N = TOTAL NUMBER OF COMPONENTS OF THAT TYPE IN THE SYSTEM, n = QUANTITY OF COMPONENTS OF THAT TYPE IN THE SYSTEM SCHEDULED FOR EXAMINATION.
(3) UNK = UNKNOWN TYPE.

7.2.4

A. AREAS OF EXAMINATION: CATEGORY F-A

Component Supports Class 1, 2 & 3

B. APPLICABLE ITEM NUMBERS:

F1.40

C. INSPECTION REQUIREMENTS:

AREAS SUBJECT TO EXAMINATIONS	RELIEF REQUEST	EXAMINATION METHOD(S)
Fig. IWF-1300-1[1]	R6	Visual (VT-3)

D. ACCESSIBILITY OR OTHER LIMITATIONS:

The areas of interest are accessible for examination.

E. IDENTIFICATION OF AREAS TO BE EXAMINED:

Oyster Creek Third Ten Year Schedule Category F-A

F. EXAMINATION METHODS AND EXTENT TO BE EMPLOYED:

Section XI requires a visual examination (VT-3) of 100% of supports other than piping supports by the end of the interval. For multiple components other than piping, within a system of similar design, function, and service, the supports of only one of the multiple components are required to be examined.

From a total of 140 component supports, 46 examinations have been scheduled for the third interval. Eleven systems are represented by this sample. See Table 7-6.

GPUN has scheduled the 46 component supports as follows:

PERIOD	TALLY	OUTAGE
1ST	(4) F1.40, VT-3 (11) F1.40, VT-3	14R 15R
2ND	(10) F1.40, VT-3	16R
3RD	(9) F1.40, VT-3 (12) F1.40, VT-3	17R 18R

NOTE: (1) FIGURE IWF-1300-1, SECTION XI 1990 ADDENDA

TABLE 7-6
CATEGORY F-A, ITEM NO. F1.40
CLASS 1, 2 & 3 COMPONENT SUPPORTS

SYSTEM	COMPONENT SUPPORT TYPE[1,2]					TOTAL	SCHED-ULED	COMPONENT DESCRIPTION[3]
	I	IV	VII	X	XV			
ISOLATION CONDENSER	$^{3}6$				$^{2}6$	12	5	2 CONDENSERS, 6 VALVES
CORE SPRAY	$^{2}8$					8	2	4 MAIN PUMPS, 4 BOOSTER PUMPS
RX. VESSEL	$^{1}1$					1	1	REACTOR SKIRT
RECIRCULA-TION		$^{7}35$		$^{4}20$	$^{1}5$	60	12	5 LOOPS (1 PUMP, 2 VALVES)
CONTAIN-MENT SPRAY	$^{5}20$					20	5	4 PUMPS, 4 HEAT EXCHANGE
FUEL POOL COOLING	$^{9}12$		$^{4}4$			16	13	3 HEAT EXCHANGE, 4 PUMPS
MAIN STEAM					$^{1}2$	2	1	2 VALVES
CONDENSATE TRANSFER	$^{2}3$					3	2	1 TANK, 2 PUMPS
SERVICE WATER	$^{1}2$					2	1	2 PUMPS
EMERGENCY SERVICE WATER	$^{1}4$					4	1	4 PUMPS
RX. CLOSED COOLING	$^{3}6$					6	3	2 HEAT EXCHANGE, 2 PUMPS
TOTAL	68	35	4	20	13	140	46	
SCHEDULED	27	7	4	4	4	46		

NOTE: (1) FOR ROMAN NUMERAL CROSS REFERENCE COMPONENT SUPPORT TYPE, SEE TABLE 7-2
(2) ^{n}N WHERE N = TOTAL NUMBER OF COMPONENTS OF THAT TYPE IN THE SYSTEM,
n = QUANTITY OF THAT TYPE IN THE SYSTEM SCHEDULED FOR EXAMINATION.
(3) SOME COMPONENTS HAVE MULTIPLE SUPPORTS.