Attachment 2
to U-601997

Revised Inservice

Testing Program

for CPS

Revision 11

Date 06-18-92

APPENDIX III

RELIEF REQUEST LISTING

Revision 11 is a complete revision.

Submitted By: [signature]

Approved By: [signature]

WP:APP3TITL

ILLINOIS POWER COMPANY
CLINTON POWER STATION
GENERAL RELIEF REQUEST INDEX

Relief Request Number	Description	Date Submitted	Date Approved	Remarks
1001	Maximum allowable extension for test frequency of valves and pumps.	6-15-92	9-30-91	(Revision 2)
1002	Deleted			

ILLINOIS POWER COMPANY
CLINTON POWER STATION
VALVE RELIEF REQUEST INDEX

Relief Request Number	Description	Date Submitted	Date Approved	Remarks
2001	Deleted			
2002	Test frequency for valve 1C11-F122	3-09-88	9-30-91	(Revision 1)
2003	Deleted			
2004	Test frequency for valves 1SX016 A/B	6-30-87	9-30-91	
2005	Deleted			
2006	Deleted			
2007	Deleted			
2008	Test method for water leg keep fill check valves.	4-23-92	Note 4	(Revision 3)
2009	Test frequency for the Manual Deluge Valves listed in Table 2009-1.	6-15-92	9-30-91	(Revision 2)
2010	Deleted			
2011	Leak rate testing, differential test pressure, analysis of leakage rate and corrective action for containment isolation valves.	12-15-88	Note 4	(Revision 1)
2012	Test frequency for ADS valves 1B21-F041 B/C/D/F, F047 A/C and F051G. Stroke time evaluation.	3/15/92	Note 1	(Revision 2)
2013	Stroke time trending of the solenoid operated valves listed in Table 2013-1.	6-15-92	Note 4	(Revision 3)
2014	Full-stroke exercising of check valves 1E12-F041 A/B/C, 1E21-F006 and 1E22-F005.	4-23-92	Note 4	(Revision 2)
2015	Deleted			
2016	Deleted			
2017	Deleted			
2018	Test frequency for valve 1E12-F475.	3-09-88	9-30-91	(Revision 1)
2019	Deleted			
2020	Deleted			
2021	Deleted			

Note 1: Acceptable per Generic Letter 89-04, Attachment 1, Position 6
Note 4: Pending NRC review.

WP:APP3TAB

ILLINOIS POWER COMPANY
CLINTON POWER STATION
VALVE RELIEF REQUEST INDEX

Relief Request Number	Description	Date Submitted	Date Approved	Remarks
2022	Exercise test for valve 1IA175.	3-09-88	9-30-91	
2023	CRD valve 112.	2-10-88	9-30-91	
2024	CRD valves 126, 127, 139 and 114.	3-15-92	Note 2	(Revision 1)
2025	CRD valve 138.	2-10-88	9-30-91	
2026	DG valves 1DG00BA-K.	3-15-92	Note 2	(Revision 1)
2027	Deleted			
2028	1C41-F336 Exercise	12-13-88	9-30-91	(Revision 1)
2029	Alt. Leak Rate Testing to allow pressure drop tests.	5-27-88	9-30-91	
2030	Deleted			
2031	Deleted			
2032	Stroke time trending of the air operated valves listed in Table 2032-1.	6-15-92	Note 3	(Revision 2)
2033	Test frequency and testing method for valves 1G33-F051 and 1G33-F052A,B.	4-23-92	Note 4	
2034	Leak rate testing in groups.	6-15-92	Note 4	

Note 2: Augmented testing requirements which are beyond the scope of 10CFR50.55a as these components are not ASME Class 1, 2 or 3. No NRC approval required.

Note 3: Acceptable per Generic Letter 89-04, Attachment 1, Positions 5 and 6.

Note 4: Pending NRC review.

WP:APP3TAB

ILLINOIS POWER COMPANY
CLINTON POWER STATION
PUMP RELIEF REQUEST INDEX

Relief Request Number	Description	Date Submitted	Date Approved	Remarks
3001	Annual measurement of pump bearing temperatures.	8-20-87	9-30-91	(Revision 1)
3002	Flow rate measurement of pumps 1D001PA, 01PB and 01PC.	4-23-92	Note 4	(Revision 2)
3003	Flow rate measurement of pumps 1C41-C001A and C001B.	3-09-88	9-30-91	(Revision 1)
3004	Deleted			
3005	Time for pumps 1C41-C001A and C001B to run prior to measuring/observing pump parameters.	6-30-87	9-30-91	
3006	Ranges for pump flow rates and differential pressure.	4-23-92	Note 4	(Revision 1)

Note 4: Pending NRC review.

WP:APP3TAB

ILLINOIS POWER COMPANY
CLINTON POWER STATION
NDE RELIEF REQUEST INDEX

Relief Request Number	Description	Date Submitted	Date Approved	Remarks
4001	Weld examination of Class 2 lines which are open-ended.	7-29-88	*	(Revision 1)
4002	Deleted			
4003	Perform VT-3 examinations per 83W84 Code in lieu of all VT-3 and VT-4 examinations.	7-29-88	*	(Revision 1)
4004	Hydraulic and Mechanical Snubbers; Frequency of Inspection, Testing, and Corrective Action	12-28-88	*	(Revision 1)

* Pending approval by NRC.

WP:APP3TAB

ILLINOIS POWER COMPANY
CLINTON POWER STATION
REPAIR/REPLACEMENT RELIEF REQUEST INDEX

Relief Request Number	Description	Date Submitted	Date Approved	Remarks
5001	Replacement bolting material	10-20-87	--	Disapproved
5002	Replacement parts for components	10-20-87	--	Disapproved
5003	Deleted			
5004	Deleted			

WP:APP3TAB

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 1001 (Revision 2)

COMPONENT INFORMATION

All pumps and valves that are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident and are listed in Table I and Table II of the IST Program except safety and relief valves and valves not tested at three (3) month or shorter intervals.

CODE REQUIREMENTS

The ASME Code Section XI, Subsection IWP-3400 requires performing an inservice test on each pump nominally every three (3) months. Subsection IWV-3411 requires that valves be exercised and stroke timed at least once every three (3) months. Subsection IWV-3521 requires that check valves be exercised at least once every three (3) months.

RELIEF REQUEST/JUSTIFICATION

The ASME Code Section XI, various subsections mentioned above, specify the test frequency interval but do not specify any allowable extension. Often there are operational constraints or other valid concerns that make it impractical to perform testing within the Code specified interval. It would be impractical and burdensome for CPS to strictly follow the Code testing intervals without extensions to cover necessary deviations. Clinton Power Station Technical Specification 4.0.2 specifies a maximum allowable extension not to exceed 25% of the surveillance interval. CPS proposes to have a 25% extension which is reasonable for most Code specified testing and provides an acceptable level of quality and safety. This is consistent with Technical Specification 4.0.5.c.

ALTERNATE TESTING PROPOSED

Illinois Power Company will utilize CPS Technical Specification 4.0.2 allowable extension with the specified interval for all pumps and valves except safety and relief valves and valves not tested at three (3) month or shorter intervals.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2002 (Revision 1)

COMPONENT INFORMATION

This Control Rod Drive (CRD) Water Header Check Valve (1C11-F122) is a containment isolation valve and prevents the back flow of reactor water when the CRD Pumps are secured. It is an ASME Section III Code Class 2. Section XI Category A/C valve. It is a 2 inch check valve and is highlighted on the attached drawing.

CODE REQUIREMENT

The ASME Code Section XI, Subarticle IWV-3521 requires that this valve be exercised every three (3) months.

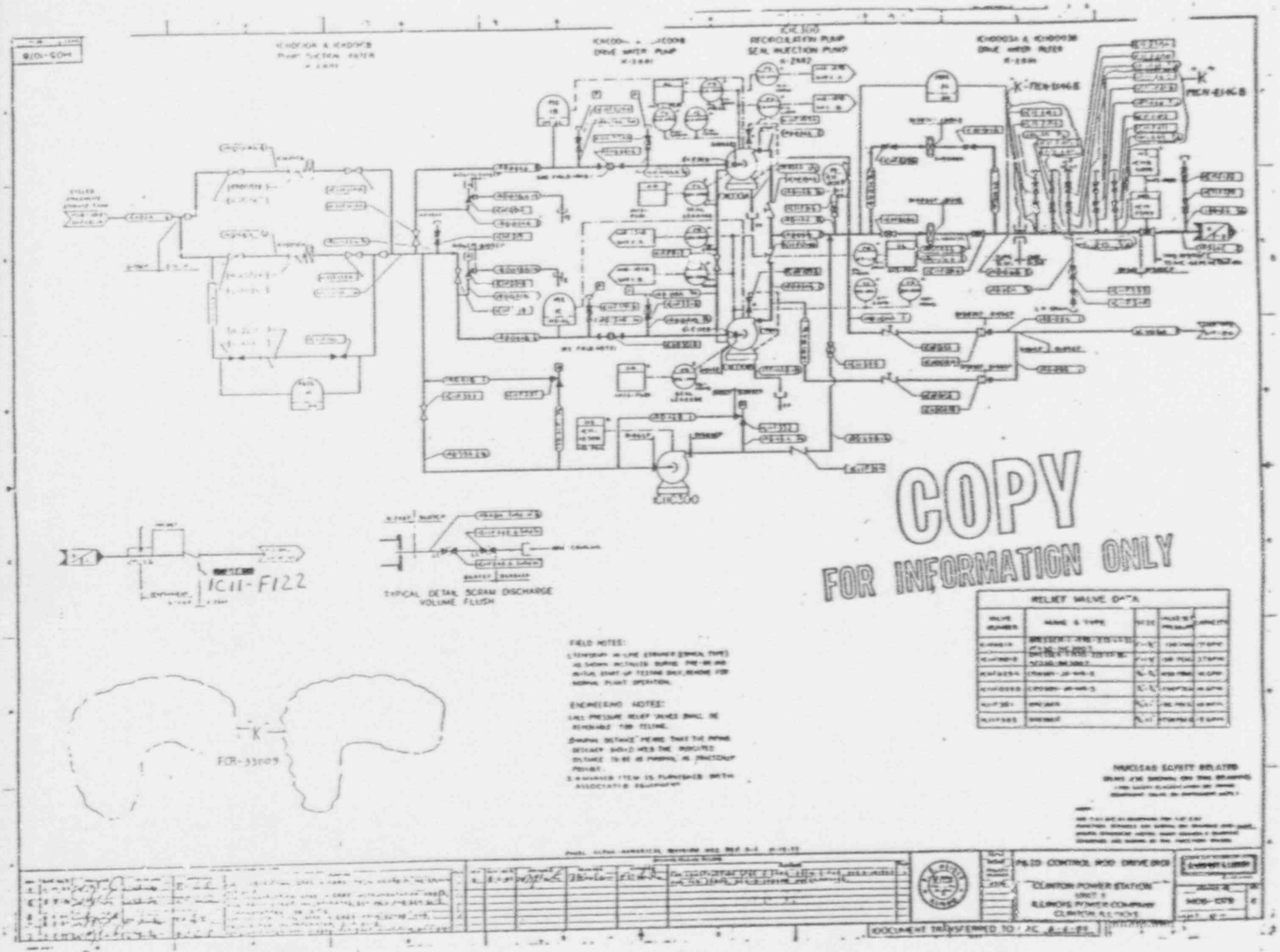
RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

This check valve is a containment isolation valve which provides drive water to the hydraulic control units and seal flow to the reactor recirculation pumps. This is a normally open valve and cannot be tested during normal plant operation or cold shutdowns since testing this valve requires that the CRD system be shutdown causing the control rods' motion to be prevented and stopping seal flow to the reactor recirculation pumps. Although the reactor recirculation pumps are not required for safe shutdown of the plant, these pumps are used to assure uniform temperatures are maintained in the vessel during cold shutdowns. Exercising this valve would also allow air to enter the CRDs which would require substantial venting of the system to remove.

ALTERNATE TESTING PROPOSED

Illinois Power Company will exercise this valve during refueling outages.



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TYPICAL DETAIL SCRAM DISCHARGE VOLUME FLUSH

RELIEF VALVE DATA

VALVE NUMBER	NAME & TYPE	SIZE	VALVE SET PRESSURE	CAPACITY

FIELD NOTES:

ENGINEERING NOTES:

NUCLEAR SAFETY RELATED

P&ID CONTROL ROD DRIVE (CRD)

CLINTON POWER STATION
UNIT 1
ILLINOIS POWER COMPANY
CLINTON, ILLINOIS

M05-1079

DOCUMENT TRANSFERRED TO / 2C 8-4-99

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2004

COMPONENT INFORMATION

The Fuel Pool Emergency Makeup Valves (1SX016A/B) provide emergency makeup water to the Fuel Pools from the lake. They are ASME Section III Code Class 3, Section XI Category B valves. They are 2½ inch motor operated gate valves and are highlighted on the attached drawings.

CODE REQUIREMENT

The ASME Code Section XI, Subsection IWV-3411 requires that these valves be exercised and stroke timed every three (3) months.

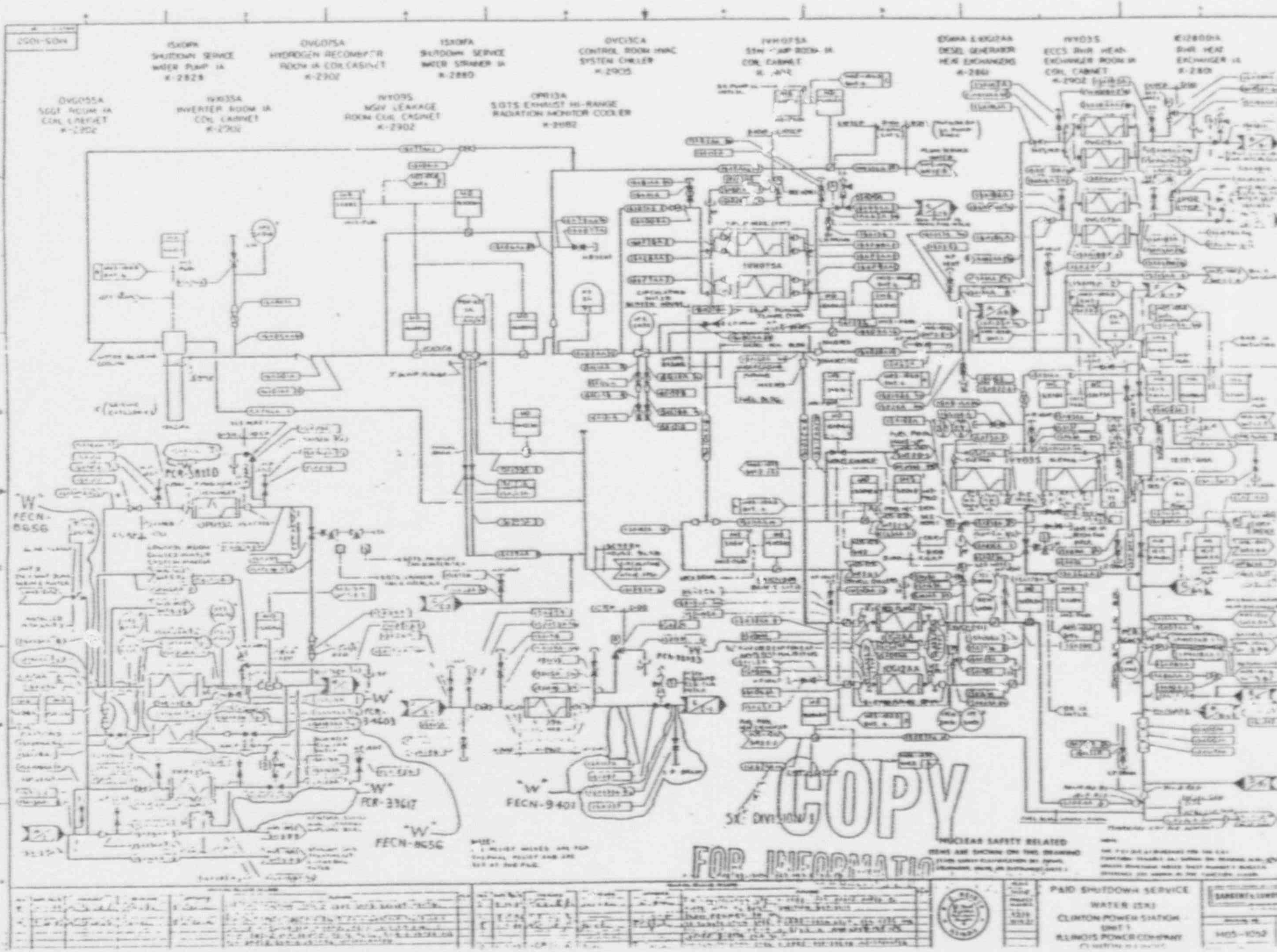
RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

Testing these valves will allow lake water into the fuel pools thereby affecting the chemistry of a large quantity of water in the pools. Cleanup of the fuel pool water will generate additional solid radwaste and delay the plant startup. Testing these valves during refueling outages will ensure that there is sufficient time to accomplish these activities.

ALTERNATE TESTING PROPOSED

Illinois Power Company will exercise and stroke time these valves during refueling outages.


2001-S044
0VG05SA
SGGT ROOM 1A
COIL CABINET
K-2302
1SX01PA
SHUTDOWN SERVICE
WATER PUMP 1A
K-2828
1VX03SA
INVERTER ROOM 1A
COIL CABINET
K-2302
0VG07SA
HYDROGEN RECOMBINER
ROOM 1A COIL CABINET
K-2302
1VY09S
MSIV LEAKAGE
ROOM COIL CABINET
K-2302
1SX01FA
SHUTDOWN SERVICE
WATER STRAINER 1A
K-2880
0VC13CA
CONTROL ROOM HVAC
SYSTEM CHILLER
K-2905
0PR13A
SGTS EXHAUST HI-RANGE
RADIATION MONITOR COOLER
K-2882
1VH07SA
SSW PUMP ROOM 1A
COIL CABINET
ECCS RHR HEAT
EXCHANGER ROOM 1A
COIL CABINET
K-2902
1E12B001A
RHR HEAT
EXCHANGER 1A
K-2801
"W"
FECN-8656
"W"
PCR-33617
"W"
FECN-8656
"W"
FECN-9401
"W"
PCR-34603
COPY
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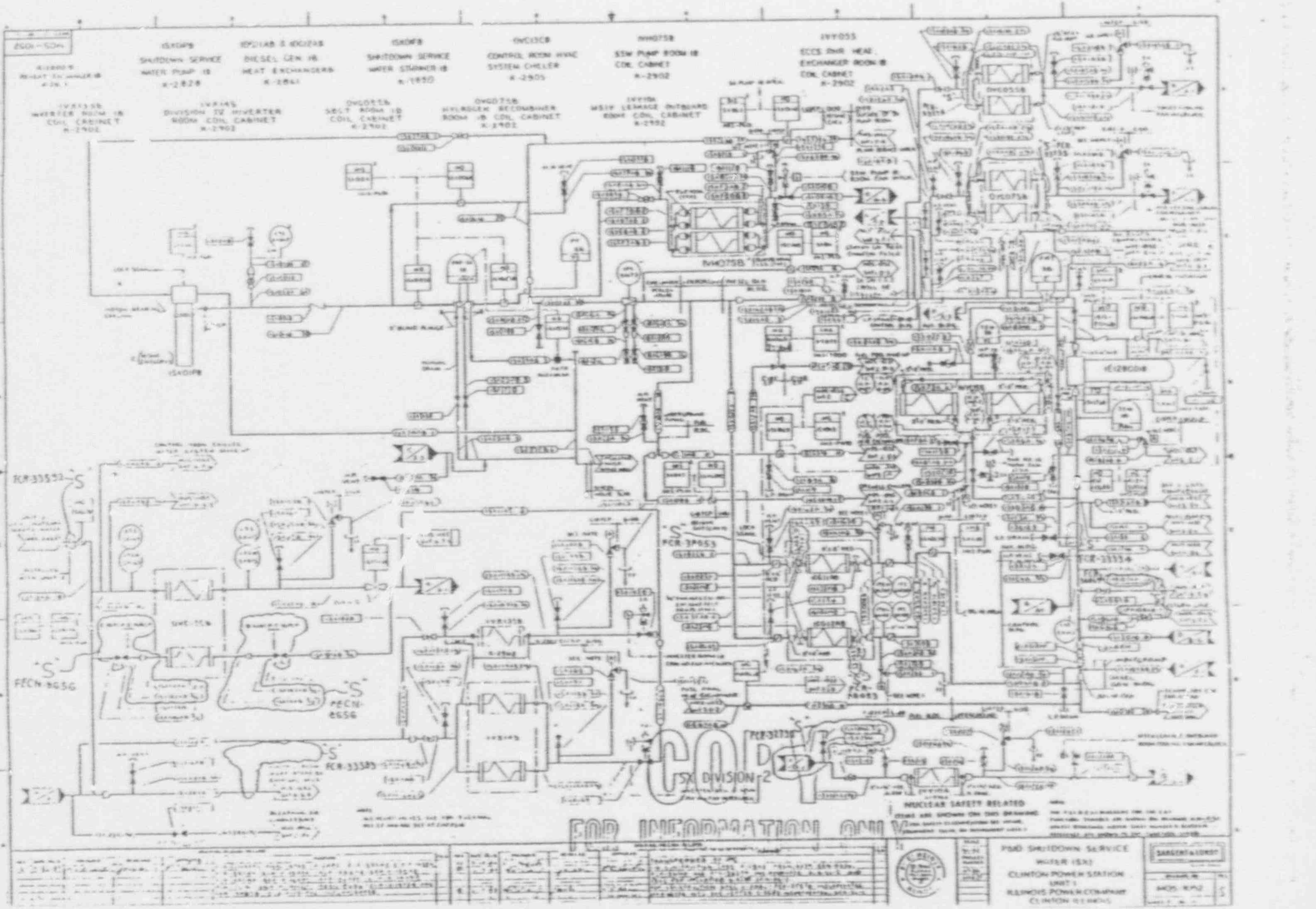
SX DIVISION 1
NUCLEAR SAFETY RELATED
P&ID SHUTDOWN SERVICE
WATER (SX)
CLINTON POWER STATION
UNIT 1
ILLINOIS POWER COMPANY
SARGENT & LUNDY
M05-1052



2601-1504
1SX01PB
SHUTDOWN SERVICE
WATER PUMP 1B
K-2828
1E02IAB & 1DG12AB
DIESEL GEN 1B
HEAT EXCHANGERS
K-2841
1SX01FB
SHUTDOWN SERVICE
WATER STRAINER 1B
K-1850
0VC13CB
CONTROL ROOM HVAC
SYSTEM CHILLER
K-2905
1VH07SB
SSW PUMP ROOM 1B
COIL CABINET
K-2902
1VY05S
ECCS RHR HEAT
EXCHANGER ROOM B
COIL CABINET
K-2902
1VX15SB
INVERTER ROOM 1B
COIL CABINET
K-2902
1VX14S
DIVISION IV INVERTER
ROOM COIL CABINET
K-2902
0VG07SB
HYDROGEN RECOMBINER
ROOM 1B COIL CABINET
K-2902
1VY10A
MSIV LEAKAGE OUTBOARD
ROOM COIL CABINET
K-2902
1SX01PB
1VH07SB
1E12B001B
FCR-33552
FECN-8656
FECN-8656
FCR-33385
FCR-3P053
FCR-33554
FCR-33730
SX DIVISION 2
COPY
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NUCLEAR SAFETY RELATED
P&ID SHUTDOWN SERVICE
WATER (SX)
CLINTON POWER STATION
UNIT 1
ILLINOIS POWER COMPANY
CLINTON ILLINOIS
SARGENT & LUNDY
M05-1052

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2008 (Revision 3)

COMPONENT INFORMATION

Valve 1E22-F006 is located between High Pressure Core Spray (HP) water-leg pump and the main HP injection line. It is a 2-inch stop-check valve, ASME Section III Class 2, Section XI Category C. It is circled on the attached drawing "A".

Valves 1E12-F085A,B,C and 1E21-F034 are located between the water-leg pumps and their respective injection lines (Residual Heat Removal (RHR) and Low Pressure Core Spray (LP)). They are ASME Section III Class 2, Section XI Category C valves. They are 2-inch stop-check valves of identical design. As their piping configuration is similar, only 1E21-F034 is circled on the attached drawing "B".

CODE REQUIREMENTS

The ASME Code, Section XI, Subarticle IWV-3520 requires that these valves be full-stroke exercised individually every three (3) months.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

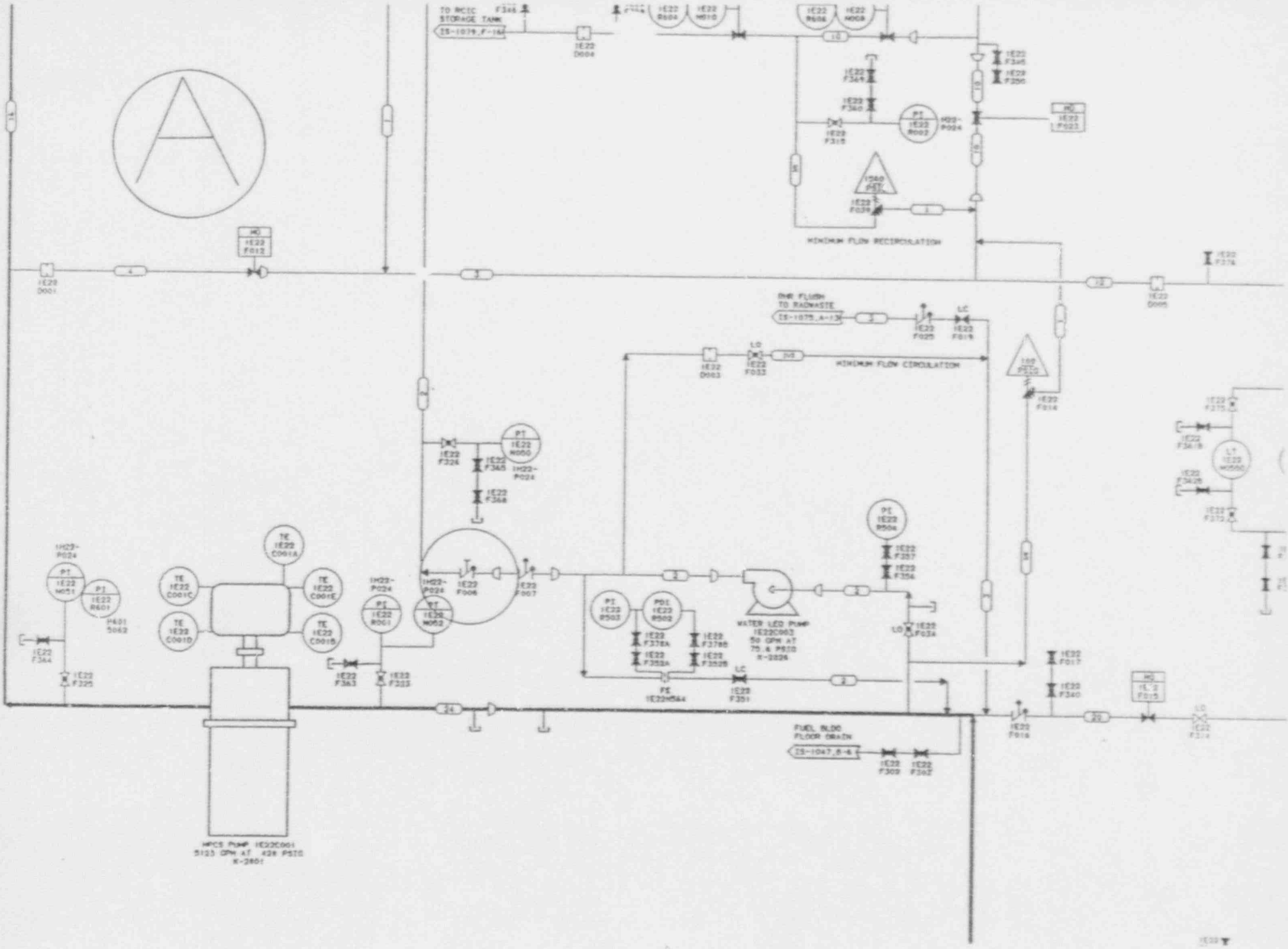
The above groups of valves, although located in separate systems, have similar configurations; they are check valves located in series with other check valves and no test connections provided between them to permit individual valve testing.

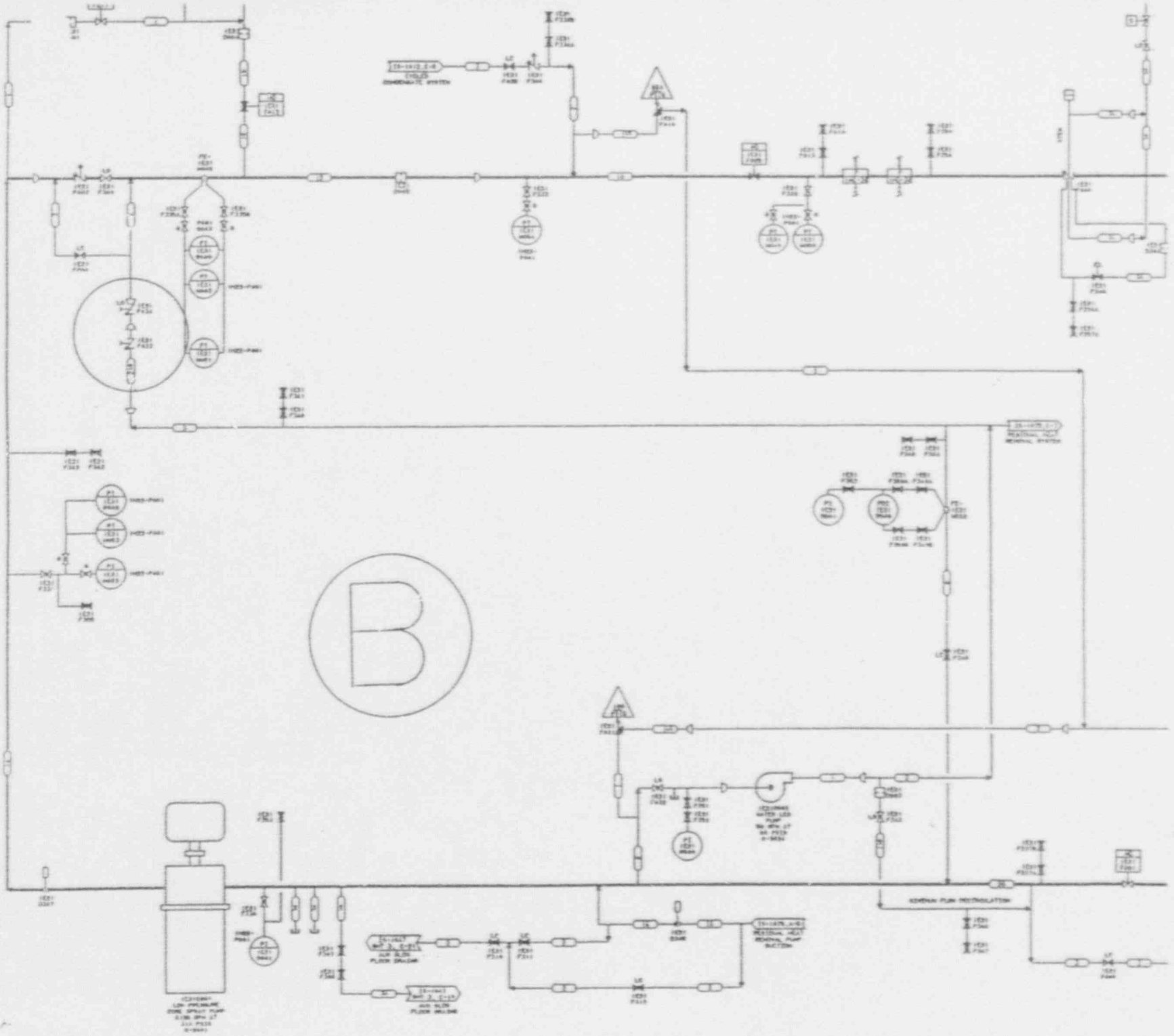
Each of these valves has a separate check valve in series. The two check valves in series, although not required by design or safety analysis, provide an added assurance that the high pressure Emergency Core Cooling System (ECCS) line will not damage the lower pressure water-leg piping. Illinois Power Company considers these two check valves in series as a single entity and will test them as such.

ALTERNATE TESTING PROPOSED

Illinois Power Company considers these two check valves in series a single entity and will perform the closure test every three (3) months as a single unit. Acceptance criteria will be established and in the event of not meeting this criteria, appropriate action will be initiated for the entity and the deficiency will be corrected.

The open exercise of these valves will also be performed every three (3) months.


TO RCIC STORAGE TANK
MINIMUM FLOW RECIRCULATION
MINIMUM FLOW CIRCULATION
RHR FLUSH TO RADWASTE
FUEL BLDG FLOOR DRAIN
WATER LEG PUMP
HPCS PUMP


B

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2009 (Revision 2)

COMPONENT INFORMATION

These Manual Deluge Valves (see Table 2009-1) provide shutdown service water to the Standby Gas Treatment Charcoal Beds, the Makeup Air Filter Package, and the Supply Air Filter Package. They are all ASME Section III Code Class 3 valves. Valves 1SX071A/B, 073A/B, 074A/B, 076A/B, 105A/B, and 107A/B are ASME Section XI Category B, 3 inch motor operated gate valves. These valves are highlighted on the attached drawing.

CODE REQUIREMENTS

The ASME Code Section XI, Subarticle IWV-3411 and IWV-3521 require that these valves be exercised and stroke timed every three (3) months.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

Testing these valves will flood the charcoal beds of the Control Room HVAC System. This would cause these trains to become inoperable and would require replacement of the charcoal.

In order to avoid flooding the charcoal beds or removal of the charcoal, the Shutdown Service Water System main header would be required to be drained and declared inoperable. The Shutdown Service Water System provides cooling water to ECCS systems and various other systems required to be operable in all modes of operation.

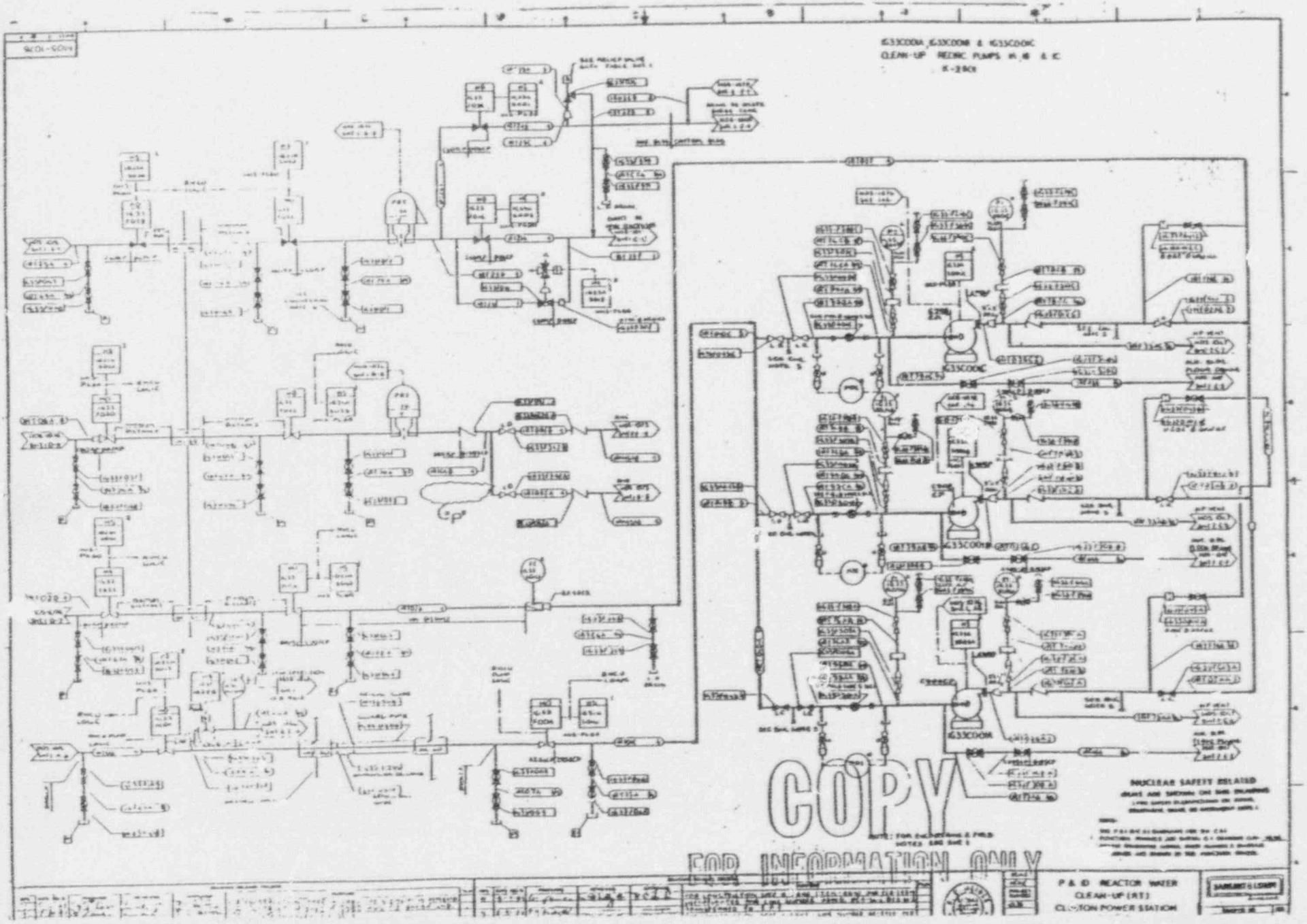
Both of the above options are not possible during cold shutdown testing. The first option would damage the charcoal beds which would require the charcoal to be removed and replaced. This testing would require the Control Room HVAC system to be declared inoperable. The second option is not possible because the plant must be shut down if the Shutdown Service Water header is drained.

ALTERNATE TESTING PROPOSED

Illinois Power Company will perform the required tests during refueling outages.

Table 2009-1

Valve Number	Size
1SX071A	3
1SX071B	3
1SX073A	3
1SX073B	3
1SX074A	3
1SX074B	3
1SX076A	3
1SX076B	3
1SX105A	3
1SX105B	3
1SX107A	3
1SX107B	3


G33C001A, G33C001B & G33C001C
CLEAN-UP RECIRC PUMPS A, B & C
K-2801
G33C001C
G33C001B
G33C001A
COPY
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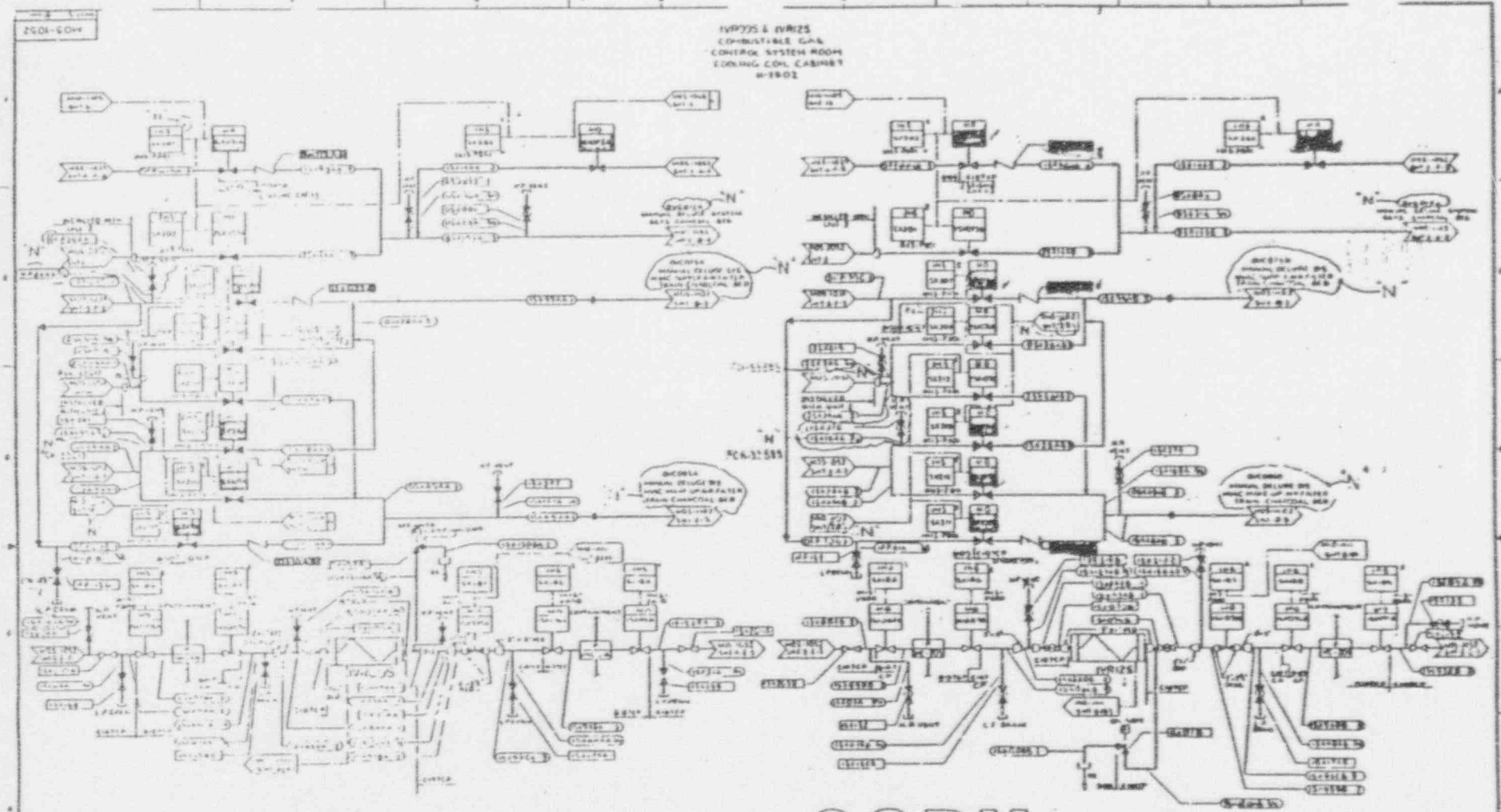
NUCLEAR SAFETY RELATED
P & ID REACTOR WATER
CLEAN-UP (RT)
CLINTON POWER STATION



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NUCLEAR SAFETY RELATED

P&ID SHUTDOWN SERVICE WATER (SX)

CLINTON POWER STATION
UNIT 1& 2
ILLINOIS POWER COMPANY
CLINTON ILLINOIS

M05-1052

DOCUMENT TRANSFERRED TO NRC

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2011 (Revision 1)

COMPONENT INFORMATION

All Section XI, Category A and A/C valves which require a leakage test per IWV-3420 as identified in Illinois Power's Pump & Valve Testing Program Plan.

CODE REQUIREMENT

The ASME Code Section XI, Subsection IWV-3420, Valve Leak Rate Testing, requires leak rate testing for valves where leakage is limited to a specific amount in fulfillment of their safety function. Subsection IWV-3423, Differential Test Pressure, requires leak rate testing be performed with the system pressure differential in the same direction as it is when the valve is performing its function. Subsections IWV-3426, Analysis of Leakage Rate, and IWV-3427, Corrective Action, require establishing the maximum permissible leakage rate and evaluating the test results for individual valves.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

For all valves except Excess Flow Check Valves:
The Nuclear Regulatory Commission has concluded that the applicable leak rate test procedures and requirements for containment isolation valves are determined by 10CFR50, Appendix J. The ASME Code requires individual valve leak rate tests, while 10CFR50, Appendix J allows testing of valves in groups. In many cases, there are no provisions to leak rate test inboard and outboard containment isolation valves individually. Therefore, the maximum permissible leakage rate for individual valves cannot be specified. As the purpose of these valves is to isolate the containment, testing in groups, i.e., by containment penetration, would verify the integrity of the containment boundary.

Also, Section XI, IWV-3427(b), specifies additional requirements for valve sizes of six inches and larger, beyond the requirements of IWV-3427(a). These requirements involve the use of leak rate trending in determining subsequent test intervals. However, industry data has shown that the trending of leak rates is not a meaningful way to predict failure.

For Excess Flow Check Valves
Excess Flow Check Valves are not required to be individually leak rate tested (Type B or Type C) per Clinton Power Station (CPS) Technical Specification or 10CFR50, Appendix J. However, excess flow check valves are included within the Integrated Leak Rate Test (ILRT) boundaries. Although the ILRT does not measure individual valve leakage rates, the satisfactory completion of the ILRT verifies the overall function of these valves.

RELIEF REQUEST NO. 2011 (Continued)

ALTERNATE TESTING PROPOSED

For all valves except Excess Flow Check Valves

Illinois Power Company will utilize 10CFR50, Appendix J and CPS Technical Specifications to determine the differential test pressure for these containment isolation valves. The maximum permissible leakage rate for a specific containment penetration (inboard and outboard isolation valves combined) will be specified instead of a leakage rate for individual valves as required by IWV-3426, Analysis of Leakage Rates. The evaluation of test results will be based on the penetration leakage rate (inboard and outboard isolation valves combined) instead of on the individual valve leakage rate as required by IWV-3427, Corrective Action.

The trending requirements of IWV-3427(b) will not be implemented since meaningful trends cannot be established.

For Excess Flow Check Valves

No separate test or evaluation either by individual valve or by penetration will be performed on excess flow check valves. These valves are included within the Integrated Leak Rate Test (ILRT) boundaries.

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2012 (Revision 2)

COMPONENT INFORMATION

These Automatic Depressurization System valves (1B21-F041B/C/D/F, 1B21-F047A/C, 1B21-F051G) depressurize the Reactor Pressure Vessel to allow Low Pressure Core Spray and Low Pressure Coolant Injection Systems to inject water into the reactor. They are ASME Section III Code Class 1, Section XI Category B/C valves. They are 8 in. x 10 in. safety/relief valves.

CODE REQUIREMENTS

The ASME Code Section XI, Subsection IWV-3411 requires that these valves be exercised and stroke timed every three (3) months. Section XI, Subsection IWV-3417(a) requires trending the stroke time test results and taking appropriate corrective action.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

These valves cannot be exercised quarterly during power operations because failure of a valve in the open position would place the plant in a LOCA condition. These valves should not be exercised during cold shutdowns in order to reduce the number of challenges to safety/relief valves as recommended by NUREG-0737 and a recent study on the subject (BWR Owner's Group Evaluation of NUREG-0737 Item II.K.3.16, Reduction of Challenges and Failures of Relief Valves).

The reactor pressure is not utilized when testing these valves. A handswitch is utilized with a special tool which reduces the valve speed to avoid damaging the seating surfaces and the disk. Based upon CPS operating experience, Illinois Power Company will consider these valves as rapid acting valves. As these valves stroke rapidly, measurement of the stroke time of these valves to the nearest second per IWV-3413(b) means that a very small increase in stroke time could result in an extremely large percentage of change. The verification that these valves meet a specified maximum stroke time of a relatively short duration provides adequate assurance of operability of these valves.

ALTERNATE TESTING PROPOSED

Illin 's Power Company will exercise and stroke time these valves during refueling outages.

Illinois Power Company will assign a maximum stroke time of two (2) seconds for these valves. If this limiting stroke time is exceeded, the valve will be declared inoperable and corrective action will be taken. This is in conformance with NRC Generic Letter 89-04, Attachment 1 Position 6.

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2013 (Revision 3)

COMPONENT INFORMATION

These valves are various rapid acting valves (see Table 2013-1) with various functions. They are ASME Section III Code Class 2 and 3, Section XI Category A and B valves. It should be noted that changes to plant design may result in revisions to Table 2013-1. These changes may be implemented prior to submittal of the revised table to the NRC.

CODE REQUIREMENTS

The ASME Code, Section XI, Subarticle IWV-3417(a) requires trending the stroke time results for these valves and taking appropriate corrective action.

RELIEF REQUEST/JUSTIFICATION

Per Generic Letter 89-04, these valves are defined as rapid acting, where measurement of the stroke time of these valves to the nearest second per IWV-3413(b) means that a very small increase in stroke time would result in an extremely large percentage of change. The verification that these valves meet a specified maximum stroke time of a relatively short duration provides adequate assurance of operability of these valves.

ALTERNATE TESTING PROPOSED

Illinois Power Company will assign a maximum stroke time of two (2) seconds for these valves. If this limiting stroke time is exceeded, the valve will be declared inoperable and corrective action will be taken.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

Valve No.	Size	Valve No.	Size
1CM011	3/4	1PS022	1/2
1CM012	3/4	1PS023	1/2
1CM022	3/4	1PS031	3/4
1CM023	3/4	1PS032	3/4
1CM025	3/4	1PS034	3/4
1CM026	3/4	1PS035	3/4
1CM047	3/4	1PS037	3/4
1CM048	3/4	1PS038	3/4
1E12-F060A	3/4	1PS043A	3/4
1E12-F060B	3/4	1PS043B	3/4
1E12-F075A	3/4	1PS044A	3/4
1E12-F075B	3/4	1PS044B	3/4
1E31-F014	1	1PS047	3/4
1E31-F015	1	1PS048	3/4
1E31-F017	1	1PS055	1/2
1E31-F018	1	1PS056	1/2
1PS004	3/4	1PS069	1/2
1PS005	3/4	1PS070	1/2
1PS009	3/4	1VR035	3/4
1PS010	3/4	1VR036	3/4
1PS016	1/2	1VR040	3/4
1PS017	1/2	1VR041	3/4
		1WX019	2
		1WX020	2

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2014 (Revision 2)

COMPONENT INFORMATION

These testable check valves (1E12-F041 A/B/C, 1E21-F006, and 1E22-F005) provide isolation from the reactor coolant system and the emergency core cooling systems (Residual Heat Removal, Low Pressure Core Spray, High Pressure Core Spray). These valves are ASME Section III Code Class 1, Section XI Category A/C valves. Valves 1E12-F041 A,B, and C are 12" diameter and valves 1E21-F006 and 1E22-F005 are 10" diameter. All of these valves are non-slam check valves. One of these valves (1E12-F041A), which is typical of the group, is circled on the attached drawing.

CODE REQUIREMENTS

The ASME Code, Section XI, Subsection IWV-3520 requires that these valves be exercised every three (3) months unless such operation is not practical during plant operation. In this situation, the valves may be part-stroke exercised during plant operation and full-stroke exercised during cold shutdown.

RELIEF REQUEST/JUSTIFICATION

Exercising these valves on a three month frequency using the emergency core cooling system pumps to inject water into the reactor is not in the interest of plant safety, because this cooler water would create an undesirable power transient. In addition, neither the Low Pressure Core Spray nor Residual Heat Removal pumps are capable of opening their injection valves against full reactor pressure. Mechanically exercising these valves during reactor operation is not practical because they are located inside the drywell and access is restricted due to radiation conditions.

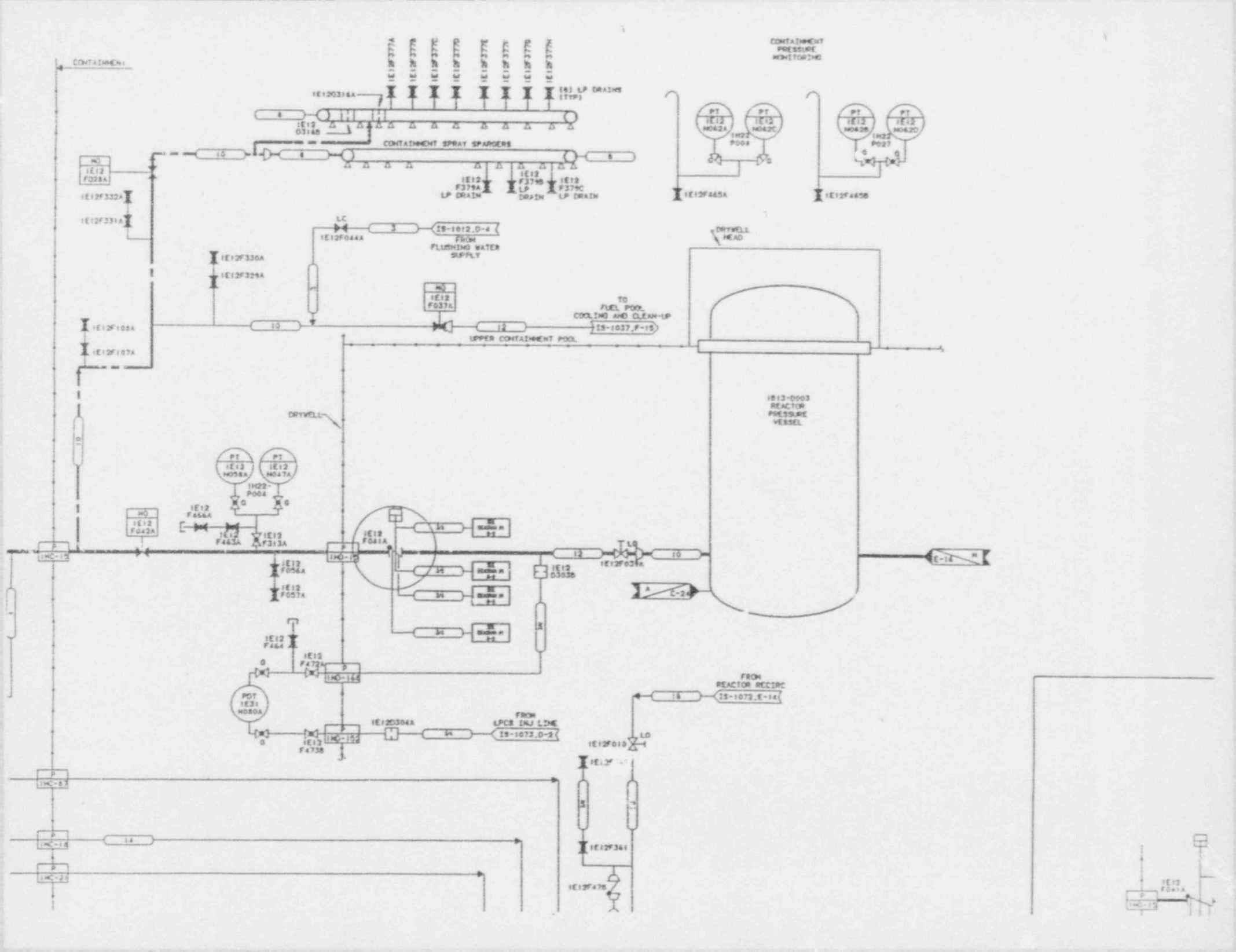
Mechanically exercising these valves on a cold shutdown frequency as allowed by the ASME Code is not practical because the air operator is not designed to perform a full stroke test. Although the air operator can be removed to perform the full stroke test, this is a significant maintenance activity and could interfere with work which is necessary to restore the plant to service. This would create an unreasonable hardship for Illinois Power Company which is not consistent with the guidelines for cold shutdown testing which were provided in Generic Letter 89-04.

Using pump pressure to exercise these valves during cold shutdown is also not in the interest of plant safety. Although temperature could be matched fairly closely between the injection source (emergency core cooling systems) and the reactor, a minor thermal mismatch between these temperatures creates an undesirable effect on the fatigue life of the reactor nozzles.

In addition, the injection lines associated with the residual heat removal system nozzles are not equipped with internal spargers. General Electric Service Information Letter 401 identifies problems in injecting water through this flow path and the potential damage to nuclear instrumentation or fuel assemblies which could occur if this flow path were used for other than emergency conditions.

ALTERNATE TESTING PROPOSED

Illinois Power Company will partial-stroke exercise these valves using the air operators during cold shutdown and full stroke exercise the valves by removing the air actuator during refueling outages and measuring the torque required to lift the disc and then move the disc through a full stroke.


CONTAINMENT
CONTAINMENT PRESSURE MONITORING
CONTAINMENT SPRAY SPARGERS
(6) LP DRAINS (TYP)
FROM FLUSHING WATER SUPPLY
TO FUEL POOL COOLING AND CLEAN-UP
UPPER CONTAINMENT POOL
DRYWELL HEAD
DRYWELL
1B13-0003 REACTOR PRESSURE VESSEL
FROM REACTOR RECIRC
FROM LPCS INJ LINE

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2018 (Revision 1)

COMPONENT INFORMATION

Reverse flow check valve 1E12-F475 is a containment isolation valve and provides necessary thermal relief for the Residual Heat Removal System piping between valves 1E12-F008 and 1E12-F009. It is an ASME Section III Code Class 2, Section XI Category A/C valve. It is a one inch check valve and is highlighted on the attached drawing.

CODE REQUIREMENT

The ASME Code Section XI, Subarticle IWV-3521 requires that this valve be exercised every three (3) months.

RELIEF REQUEST/JUSTIFICATION

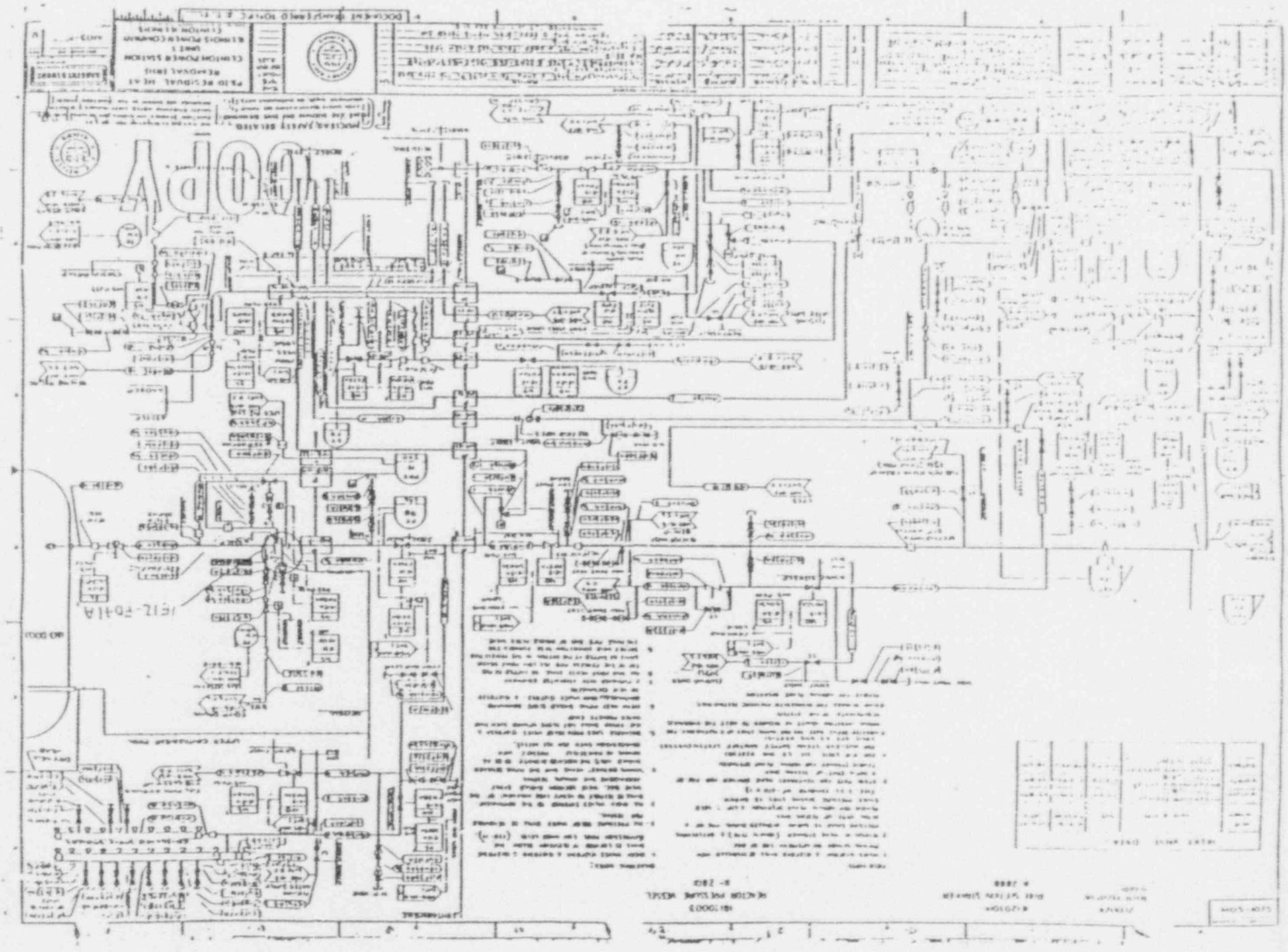
Illinois Power Company requests relief from the Code requirements for the following reasons:

This valve is installed in the piping of the shutdown cooling mode of operation of the Residual Heat Removal System and is located inside the drywell. During normal operation, this line is pressurized by the reactor recirculation system. The valve is not designed to open against this pressure. Therefore, this valve cannot be exercised quarterly.

This valve cannot be exercised during cold shutdowns since the shutdown cooling mode of the Residual Heat Removal System will be inservice. As this line is pressurized at all times during the cold shutdowns, an exercise test is not feasible. In refueling outages, the shutdown cooling and reactor recirculation can be isolated prior to reactor startup to facilitate the operating of this valve.

ALTERNATE TESTING PROPOSED

Illinois Power Company will exercise this valve during refueling outages.



ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2022

COMPONENT INFORMATION

Valve 1IA175 is a ½ inch check valve which functions as a containment isolation valve. The attached P&ID depicts the configuration of this valve in the system.

CODE REQUIREMENT

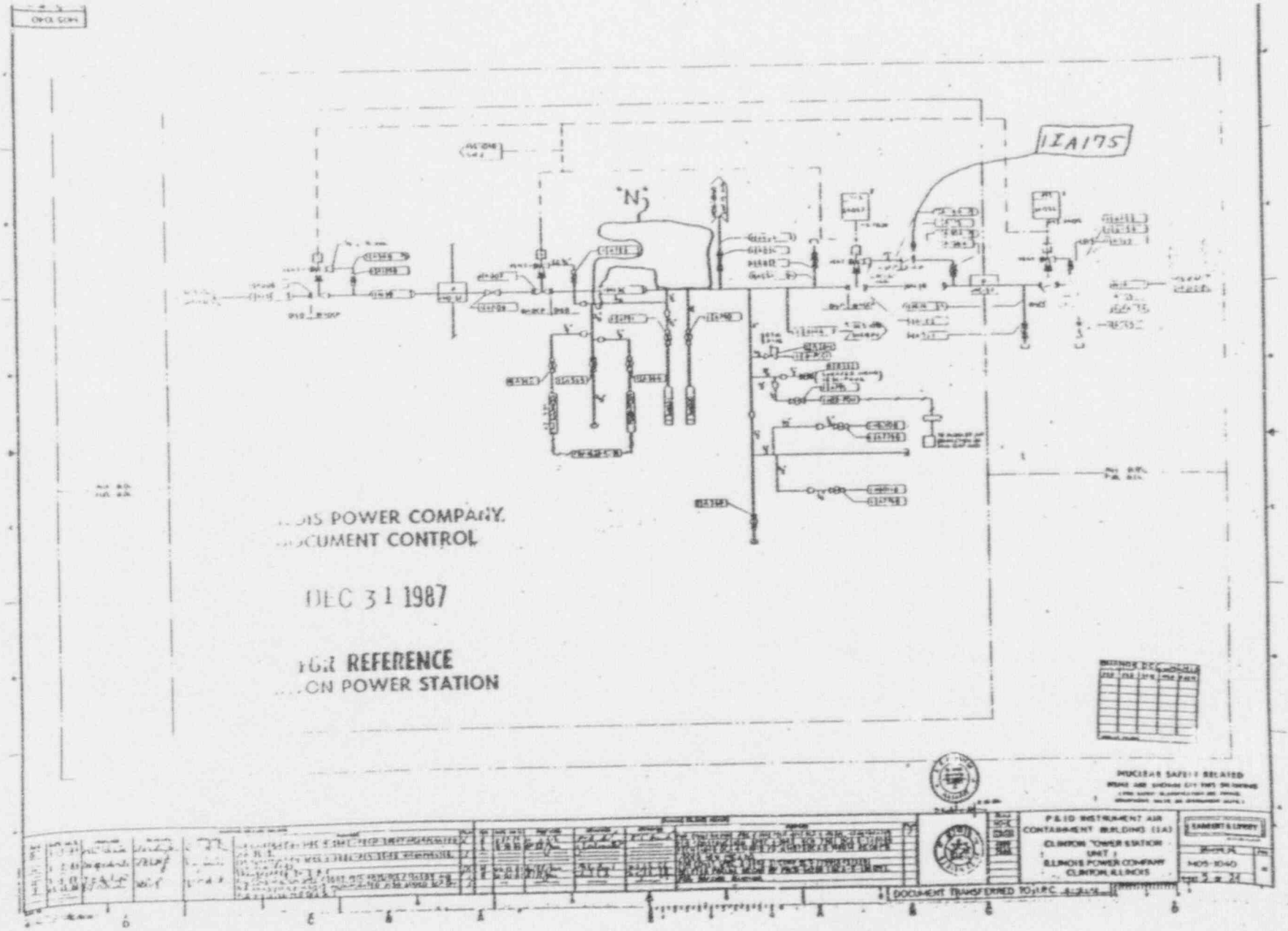
The ASME Code Section XI, Subarticle IWV-3521 requires check valves to be exercised to their safety position every three (3) months.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements because there is no way to functionally test this valve without performing a leak rate test. No direct containment leakage path is available through this valve. The leakage path through this valve is limited by the pipe cap and the piping connections to the actuator. As the probability for leakage through these connections is small, it appears to be excessive to leak test this penetration on a quarterly or cold shutdown basis.

ALTERNATE TESTING PROPOSED

Illinois Power Company will satisfy the exercise requirement for this ½ inch check valve upon performance of the leak rate test. The frequency of the exercise test will be revised to coincide with the leak rate frequency, i.e., 2 years.


1IA175
"N"
...OIS POWER COMPANY.
...OCUMENT CONTROL
DEC 31 1987
...GR REFERENCE
....ON POWER STATION
P & ID INSTRUMENT AIR
CONTAINMENT BUILDING (IA)
CLINTON POWER STATION
UNIT 1
ILLINOIS POWER COMPANY
CLINTON, ILLINOIS
DOCUMENT TRANSFERRED TO U.P.C.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2023

COMPONENT INFORMATION

Valve 115 (typical of 145 each) is the control rod drive accumulator supply check valve; refer to attached drawing. These are Category A/C ½-inch check valves. These valves allow the individual accumulators to be charged with sufficient pressure to scram the appropriate control rod drive upon loss of CRD header pressure. With a loss of header pressure, these valves must close to maintain enough pressure in the accumulator to insert the CRDs.

CODE REQUIREMENT

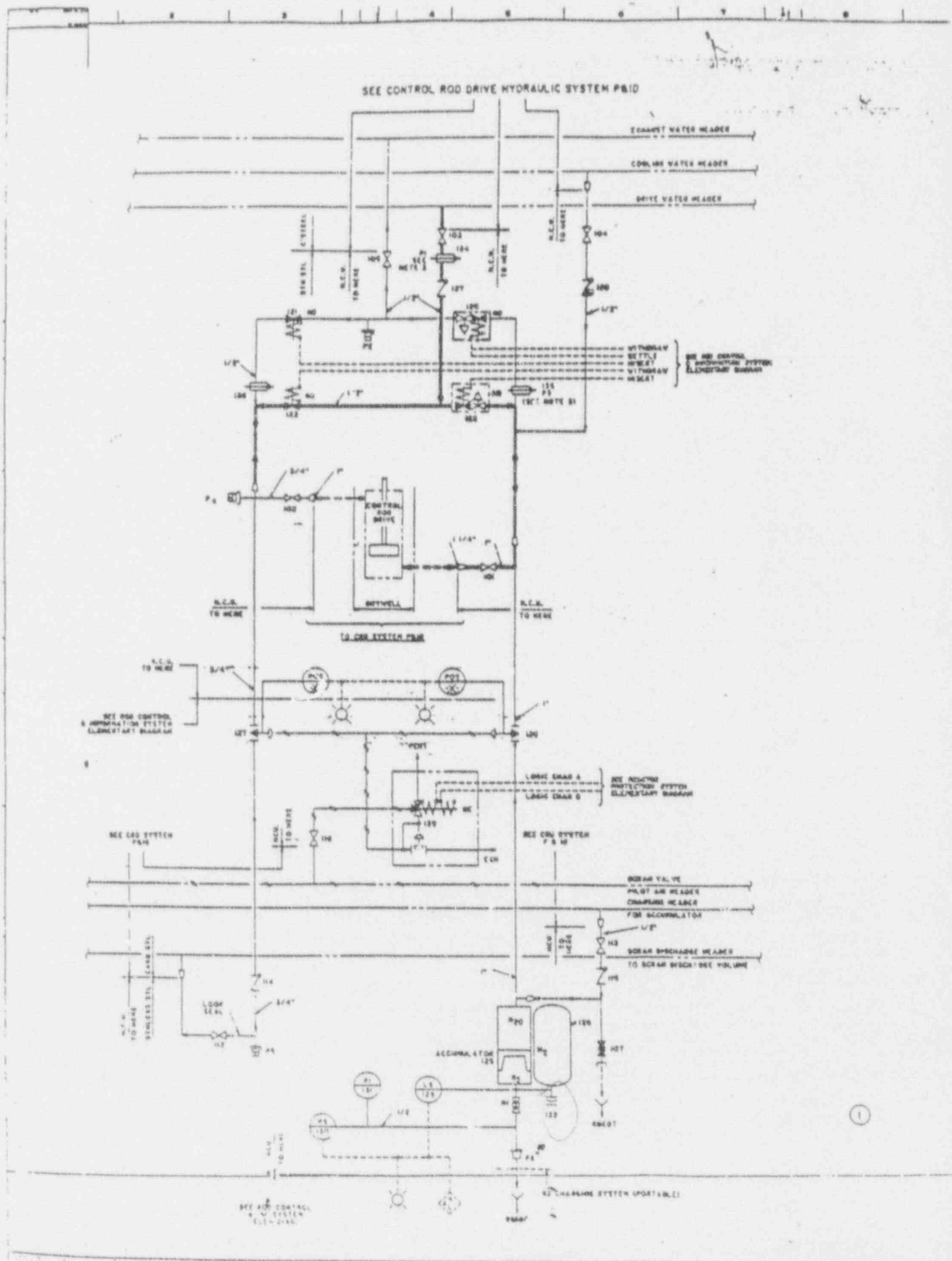
Section XI, Subarticle IWV-3521 requires check valves to be exercised to their safety position every three (3) months. IWV-3420 requires Category A valves to be leak tested every 2 years to verify the component's ability to perform its safety function.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the above Code requirements because it is not feasible to individually exercise these valves without securing the CRD pumps. The reverse flow exercising and leakage tests of these check valves will be satisfied by the performance of an accumulator pressure drop test, with the pumps secured, during refueling outages. This test will verify the valve is closed by monitoring the accumulator pressure which would indicate any leakage past the check valve.

ALTERNATE TESTING PROPOSED

Illinois Power Company will satisfy the leakage and exercise tests for these valves upon performance of the accumulator pressure drop test on a refueling outage frequency.


SEE CONTROL ROD DRIVE HYDRAULIC SYSTEM P&ID
EXHAUST WATER HEADER
COOLING WATER HEADER
DRIVE WATER HEADER
CONTROL ROD DRIVE
DRYWELL
TO CRD SYSTEM P&ID
ACCUMULATOR
125
H_2O
N_2
N2 CHARGING SYSTEM (PORTABLE)

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2024 (Revision 1)

COMPONENT INFORMATION

Valves 1C11-126, 127 and 139 (typical of 145 each) are power operated valves which actuate (open) to scram the control rod drives. Valve 1C11-114 (typical of 145 each) is the scram discharge check valve. Refer to the attached schematic drawing for the system.

Valve 126 is a power operated, Category B, 1" diaphragm operated control valve. This valve opens to allow flow to scram the control rod drive. Valve 127 is a power operated, Category B, 3/4" diaphragm operated control valve. This valve opens to allow flow to exhaust from the control rod drive to the scram discharge volume. Valve 139 is a power operated, Category B, pilot air valve. This valve opens to relieve pressure to valves 126 and 127 which causes them to open. Valve 114 is a 3/4" check valve, Category C. This valve opens to allow flow to the scram discharge volume.

CODE REQUIREMENTS

ASME Section XI, Subarticles IWV-3411 and IWV-3413 require power operated valves to be exercised and stroke time tested every 3 months. IWV-3521 requires check valves to be exercised on a 3 month frequency, as well. These valves are not ASME Class 1, 2, or 3, but are included in the CPS Inservice Testing Program since the system performs a safety function. This relief request does not require NRC approval.

RELIEF REQUEST/JUSTIFICATION

These valves operate simultaneously when a scram signal is present. As these valves are skid mounted with no provisions for testing, it is not practical to individually test each valve without extensive modifications, which would create a financial hardship to Illinois Power Company. The current testing, per Technical Specification 4.1.3.2, monitors individual rod scram time. This testing does not measure stroke time for the power operated valves or provide specific exercising verification for either the power operated or check valves. However, it does assure that each valve functions properly to allow the rod to move to its safety position in the required time.

ALTERNATE TESTING PROPOSED

Testing of the control rod drive per Technical Specification 4.1.3.2 will be performed in lieu of the Code requirements. The Technical Specifications require all rods to be tested following any core alterations and any prolonged outages (120 days). Ten percent of the rods are tested on a rotating basis every 120 days and any rod requiring maintenance is tested upon completion of the work. This is in accordance with NRC Generic Letter 89-04, Attachment 1, Item 7.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2025

COMPONENT INFORMATION

Valve 138 (typical of 145 each) is a ½" Category C check valve on the CRD hydraulic control units. Valve 138 is the CRD cooling water check valve which must close upon reverse flow to allow the CRD to insert. Reverse flow through this check valve could impair the function of the CRD. See attached drawing.

CODE REQUIREMENT

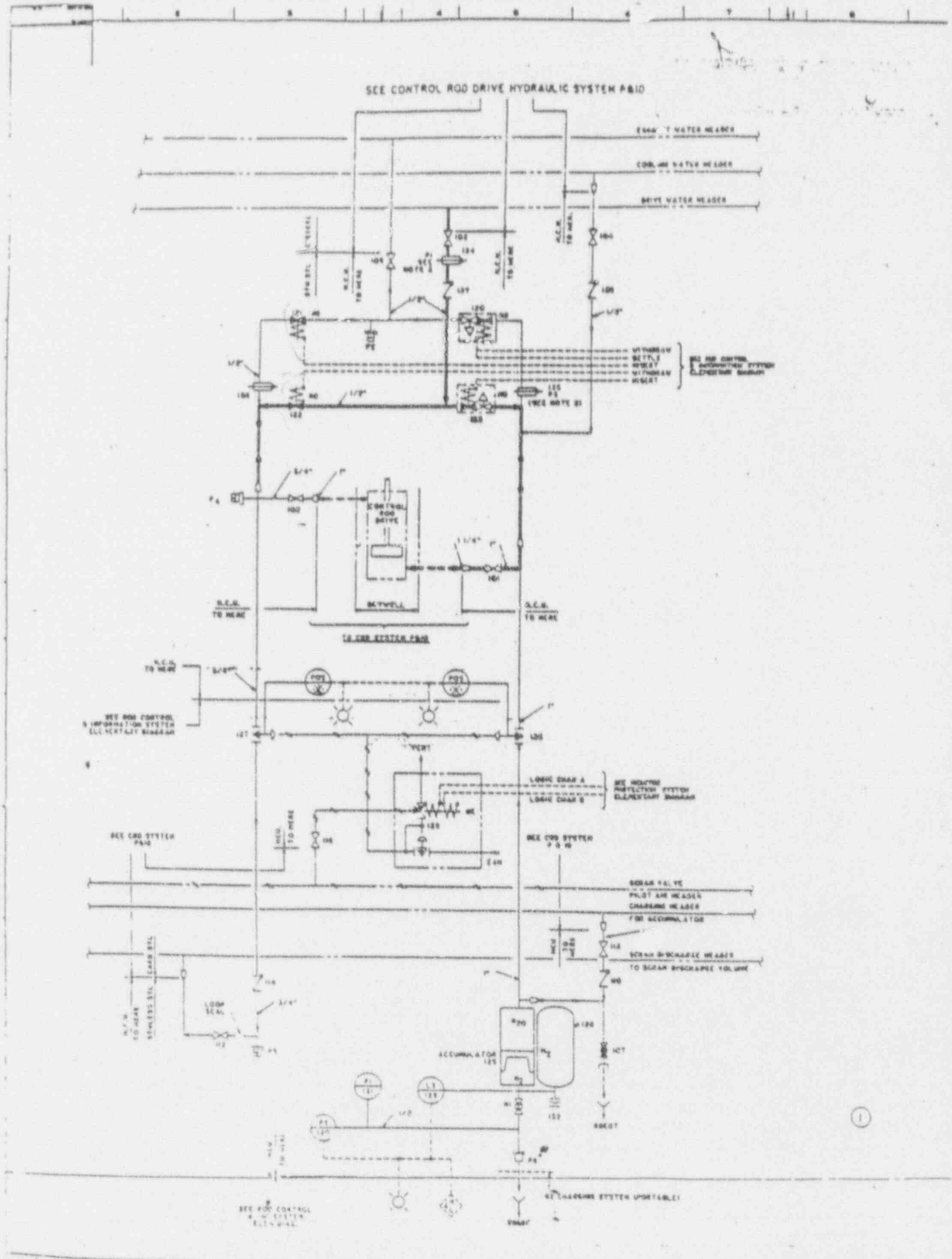
Section XI, Subarticle IWV-3521 requires check valves to be exercised to their safety position every three (3) months.

RELIEF REQUEST/JUSTIFICATION

Failure of these valves to reverse flow exercise would be identified by performing a "notch" test. The notch test is required per Technical Specification 4.1.3.1.2 which moves each withdrawn CRD one notch every 7 days and every 24 hours if one CRD is immovable as a result of friction. The failure of valve 138 would be determined by the inability to meet the acceptance criteria of this surveillance. The CRD would "double-notch" if valve 138 did not properly exercise. A "double-notch" is where the CRD would not be able to move one notch at a time.

ALTERNATE TESTING

Exercise valves by performing a "notch" test as described above (i.e., complying with Technical Specification 4.1.3.1.2).



SEE CONTROL ROD DRIVE HYDRAULIC SYSTEM P&ID
COOLING WATER HEADER
DRIVE WATER HEADER
CONTROL ROD DRIVE
DRYWELL
TO CRD SYSTEM P&ID
SEE ROD CONTROL & INFORMATION SYSTEM ELEMENTARY DIAGRAM
SEE CRD SYSTEM P&ID
LOOP SEAL
ACCUMULATOR
SEE ROD CONTROL & IN SYSTEM ELEM DIAG.

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2026 (Revision 1)

COMPONENT INFORMATION

Diesel generator (DG) air start valves, 1DG008A-K are 1.5" power operated, Category B valves required to open to allow air to flow to the air motors which start the emergency Diesel Generators to supply back-up power for the plant.

CODE REQUIREMENTS

ASME Section XI, Subarticles IWV-3411 and IWV-3413 require power operated valves to be exercised and have their stroke time measured every three (3) months. These valves, however, are not ASME Class 1, 2, or 3, but are included in the CPS Inservice Testing Program since the system performs a safety function. This relief request does not require NRC approval.

RELIEF REQUEST/JUSTIFICATION

These valves are totally enclosed solenoid valves with no positive means of determining valve position. It is not practical to record individual stroke time for these valves without extensive modifications, which would create a financial hardship to Illinois Power Company. Technical Specification 4.8.1.1.2 requires each diesel generator to be tested at least every 31 days. These tests are designed to test the diesel generator as a unit, but do not specifically verify actuation of each individual valve.

ALTERNATE TESTING PROPOSED

No stroke time testing of these air start valves will be performed. The air gauge upstream of each valve will be monitored to verify that a pressure drop has occurred which indicates that the valves have opened. In addition, diesel generator start times are monitored closely. This test will be performed on a monthly frequency.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST
RELIEF REQUEST NO. 2028 (REVISION 1)

COMPONENT INFORMATION

Valve 1C41-F336 is a check valve downstream of the Standby Liquid Control (SC) pump and is physically located inside the c well. This is an ASME Section III Class 1, Section XI Category /C, 4-inch check valve. The valve is circled on the attached drawing.

CODE REQUIREMENT

The ASME Code, Section XI, Subarticle IWV-3521 requires that this check valve be full stroke exercised every three (3) months.

RELIEF REQUEST/JUSTIFICATION

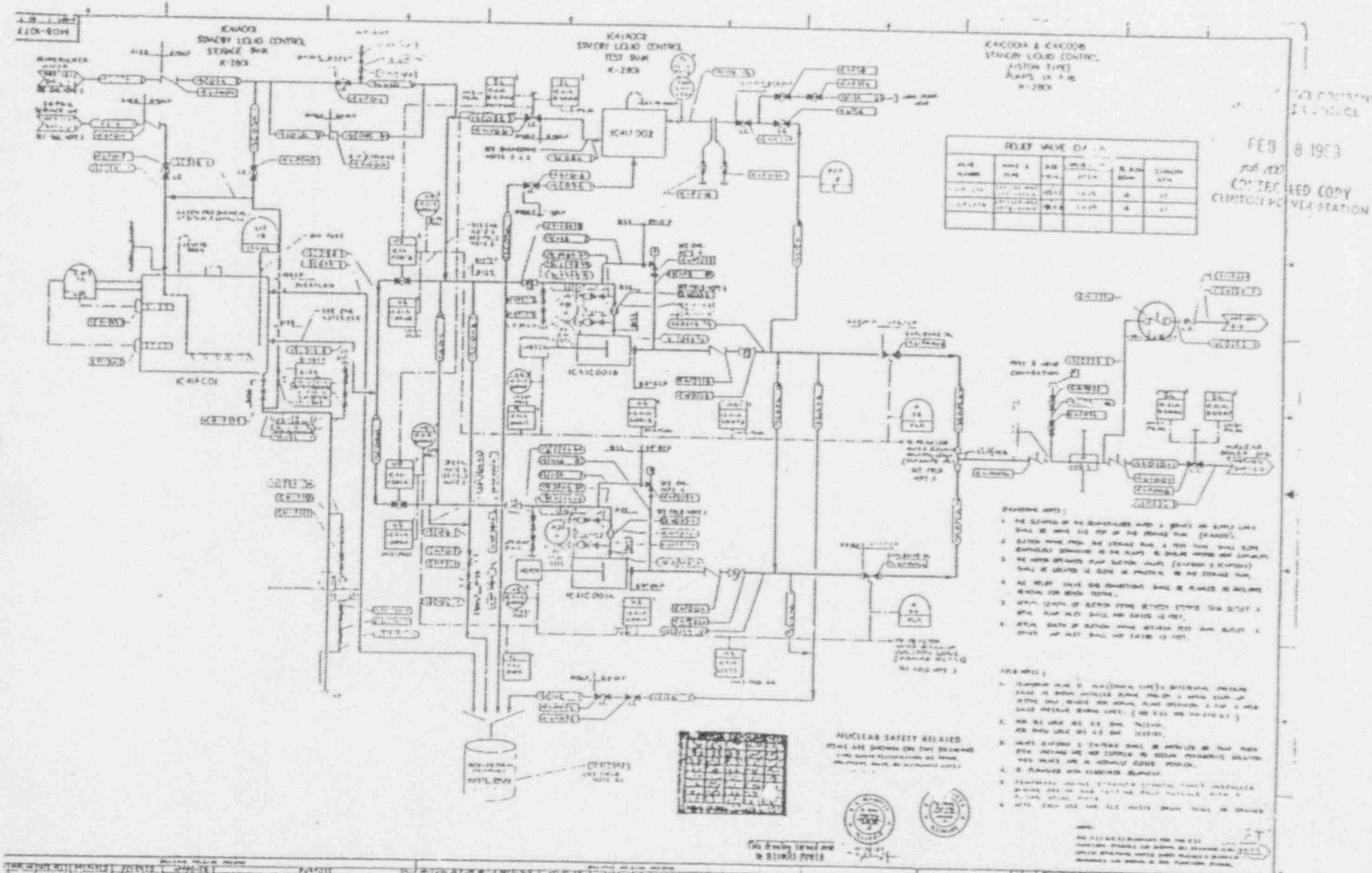
Illinois Power Company requests relief from the Code requirement for the following reasons:

This check valve is downstream of the explosive injection valves which are only required to be opened during refueling outages.

The check valve is totally enclosed without any provisions for exercising the valve externally.

ALTERNATE TESTING PROPOSED

Illinois Power Company will full stroke exercise this check valve every refueling outage. The open direction exercise will be verified with system flow and the closed direction exercise will be verified with a leakage test.


M05-1077
1C41A001
STANDBY LIQUID CONTROL
STORAGE TANK
K-2801
1C41A002
STANDBY LIQUID CONTROL
TEST TANK
K-2801
1C41C001A & 1C41C001B
STANDBY LIQUID CONTROL
PISTON TYPE
PUMPS
K-2801
RELIEF VALVE DATA
1C41C001A
1C41C001B
NUCLEAR SAFETY RELATED
FEB 8 1983
CONTROLLED COPY
CLINTON POWER STATION
P&ID STANDBY LIQUID
CONTROL (SC)
CLINTON POWER STATION
UNIT 1
ILLINOIS POWER COMPANY
CLINTON, ILLINOIS
SARGENT & LUNDY
M05-1077

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2029

COMPONENT INFORMATION

Various Category A/C check valves whose function is to hold pressure for a specified time in an air accumulator/receiver. See attached list.

CODE REQUIREMENT

The ASME Code Section XI, Subarticle IWV-3424, specifies the methodology to be used for leakage testing.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

The design of these piping systems does not facilitate the measuring of actual leak rate through these check valves.

ALTERNATE TESTING PROPOSED

Illinois Power Company will leak test these check valves as follows:

In lieu of monitoring actual leakage rates through each check valve, a pressure drop test over a specified time will be performed. This pressure drop test will not only verify the check valve has seated but will also verify the integrity of the piping system.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 2029
Attachment 1

1B21-F039B
1B21-F039C
1B21-F039D
1B21-F039E
1B21-F039H
1B21-F039K
1B21-F039S

1DG168
1DG169
1DG170
1DG171
1DG172
1DG173

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 20[illegible] (Revision 2)

COMPONENT INFORMATION

This Relief Request refers to Power (Air) Operated valves with a stroke time of 10 seconds or less (see Table 2032-1). It should be noted that changes to plant design may result in revisions to Table 2032-1. These changes may be implemented prior to submittal of the revised table to the NRC.

CODE REQUIREMENTS

The ASME Code Section XI, Subarticle IWV-3417(a) requires increasing the testing frequency to monthly for a 50% increase from the previous stroke time test.

RELIEF REQUEST/JUSTIFICATION

Per Generic Letter 89-04 these valves are defined as rapid acting (with a normal stroke time of less than 10 seconds), where a 2 second increase can cause the testing frequency for the valves to be increased from quarterly to monthly. CPS's operating experience has shown that when placed on increased frequency for minor increases in stroke time (1 - 2 seconds), none of these valves were found to have a physical problem and all were subsequently returned to normal frequency.

ALTERNATE TESTING PROPOSED

Illinois Power Company proposes to evaluate the test results for the air-operated valves on Table 2032-1 in accordance with Generic Letter 89-04, Positions 5 and 6, and the Minutes of the Public Meetings on Generic Letter 89-04, page 26, Response to Question 40. Specifically, CPS has established a reference value for each valve in Table 2032-1 based upon each valve's performance history and average stroke time when it is in good condition and operating properly. Should any valve's stroke time increase by more than 50% from the valve's reference value, CPS will consider this to be an indication of potential valve degradation and increase the valve's testing frequency.

Should any valve's stroke time increase beyond the valve's limiting stroke time value, the valve will be declared inoperable.

As this position is in accordance with the positions stated in NRC Generic Letter 89-04, no further NRC approval is required.

Table 2032-1

EIN:
0RA026
0RA027
0RA028
0RA029
0VC010A
0VC010B
0VC022A
0VC022B
1B33-F019
1B33-F020
1C11-F010
1C11-F011
1E51-F004
1E51-F005
1E51-F025
1E51-F026
1FC023
1RE019
1RE020
1RE021
1RE022
1RF019
1RF020
1RF021
1RF022
1SA030
1SA031
1SX010A
1SX010B
1SX010C
1SX023A
1SX023B
1SX027A
1SX027B
1SX027C
1SX029A

Table 2032-1 (cont.)

EIN:
1SX029B
1SX029C
1SX033
1SX037
1SX041A
1SX041B
1SX181A
1SX181B
1SX185A
1SX185B
1SX189
1SX193A
1SX193B
1SX197
1SX209
1VQ002
1VQ003
1VQ004A
1VQ004B
1VQ005
1VR001A
VR001B
1VR006A
1VR006B
1VR007A
1VR007B

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2033

COMPONENT INFORMATION

Valves 1G33-F051 and 1G33-F052A/B are the injection check valves which complete the flow path between the Reactor Water Cleanup (RT) System and the Reactor Pressure Vessel. These valves are ASME Section III Code Class 2, Section XI Category B valves. They are 4-inch check valves of identical design and are circled on the attached drawing.

CODE REQUIREMENTS

The ASME Code, Section XI, Subarticle IWV-3520 requires that these valves be full-stroke exercised individually every three (3) months.

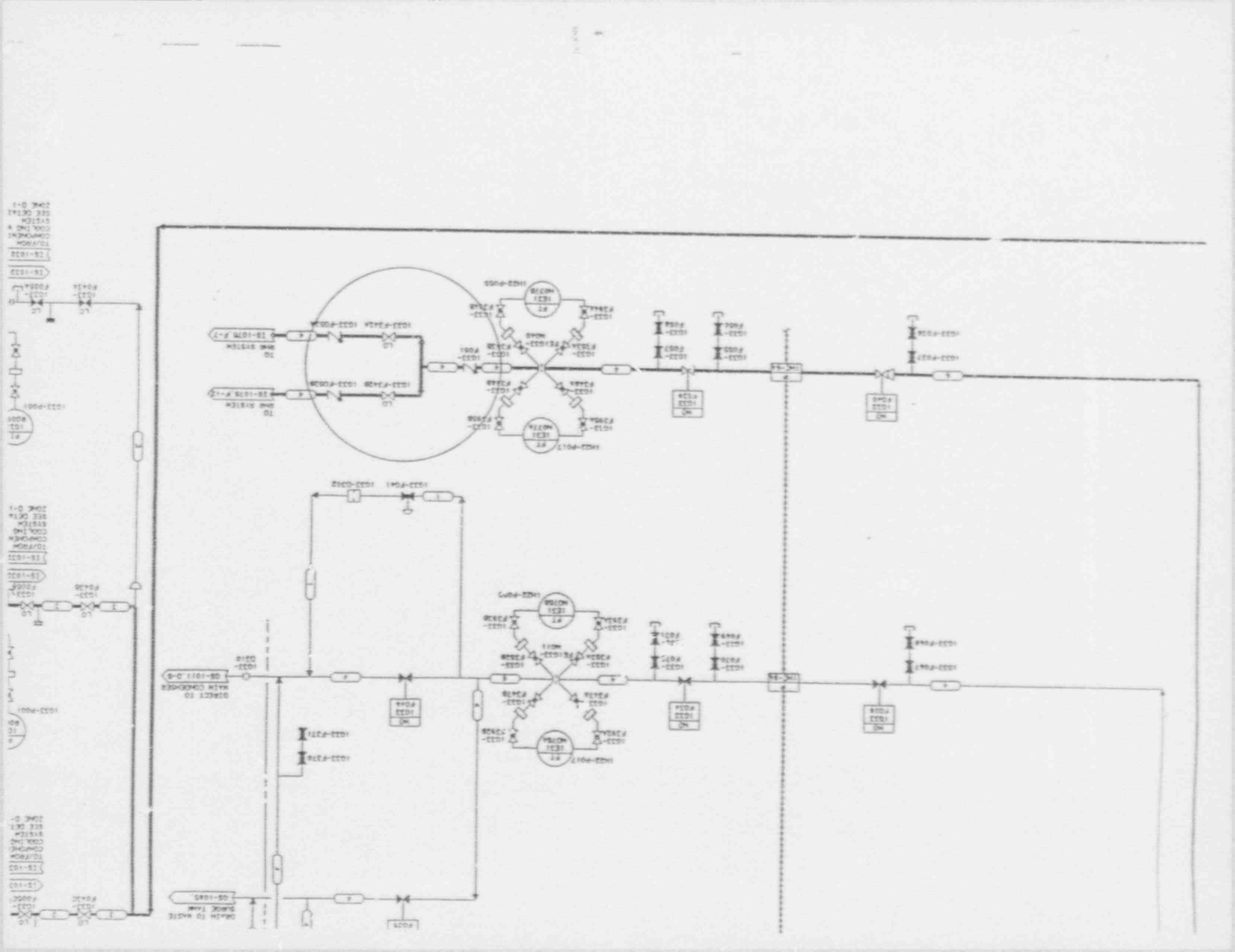
RELIEF REQUEST/JUSTIFICATION

1G33-F052A/B are parallel valves in the piping system and both of these valves are in series with 1G33-F051. These valves are located in series with no test connections provided between them to permit individual valve testing. Illinois Power Company considers valves 1G33-F052A and 1G33-F051 (both are in series) as a single entity and will test the valves as such. Valves 1G33-F052B and 1G33-F051 (both are in series) are also considered as a single entity for testing purposes and will be tested as such.

These units (valves) cannot be tested every three (3) months, since they are located in the Steam Tunnel and physical access is restricted during normal plant operation due to the high radiation field in this area. Testing these valves during cold shutdown will either require the Reactor Water Cleanup (RT) System to be out of service or will require flow to be bypassed to the condenser. Testing these valves with RT system flow bypassed to the condenser may create spurious differential flow signals and may cause containment isolation valves in this system to isolate and subsequently trip the RT pumps, which will likely require filing a Licensee Event Report (LER). Either method will cause the RT system to be out of service and create potential delay for plant startup. This will cause unnecessary hardship for Illinois Power Company without any significant gain in safety.

ALTERNATE TESTING PROPOSED

Illinois Power Company considers these check valves in series as a single entity and will perform the closure test every refueling outage as a single unit. Acceptance criteria will be established and in the event of not meeting this criteria, appropriate action will be initiated for the entity and the deficiency will be corrected.



ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 2034

COMPONENT INFORMATION

All Section XI, Category A containment isolation valves which require a leakage test per IWV-3420 as identified in Illinois Power's Pump & Valve Testing Program Plan.

CODE REQUIREMENTS

The ASME Code Section XI, Subsection IWV-3420, Valve Leak Rate Testing, requires leak rate testing for valves where leakage is limited to a specific amount in fulfillment of their safety function. Subsection IWV-3423, Differential Test Pressure, requires leak rate testing be performed with the system pressure differential in the same direction as it is when the valve is performing its function.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:
The Nuclear Regulatory Commission has concluded that the applicable leak rate test procedures and requirements for containment isolation valves are determined by 10CFR50, Appendix J. The ASME Code requires individual valve leak rate tests, while 10CFR50, Appendix J allows testing of valves in groups. By establishing conservative acceptance criteria for a valve group (containment penetration) such that none of the valves can be significantly degraded, considerable savings in personnel radiation exposure and scheduling flexibility can be achieved. This approach is of benefit to Illinois Power and provides equivalent levels of quality and safety to those achieved through individual testing. As the purpose of these valves is to isolate the containment, testing in groups, i.e., by containment penetration, would verify the integrity of the containment boundary. By establishing conservative acceptance criteria, the condition of the valves within reasonable limits can also be established by this method.

ALTERNATE TESTING PROPOSED

The maximum permissible leakage rate for a specific containment penetration (inboard and outboard isolation valves combined) will be specified utilizing conservative acceptance criteria which allows for detection of valve degradation within

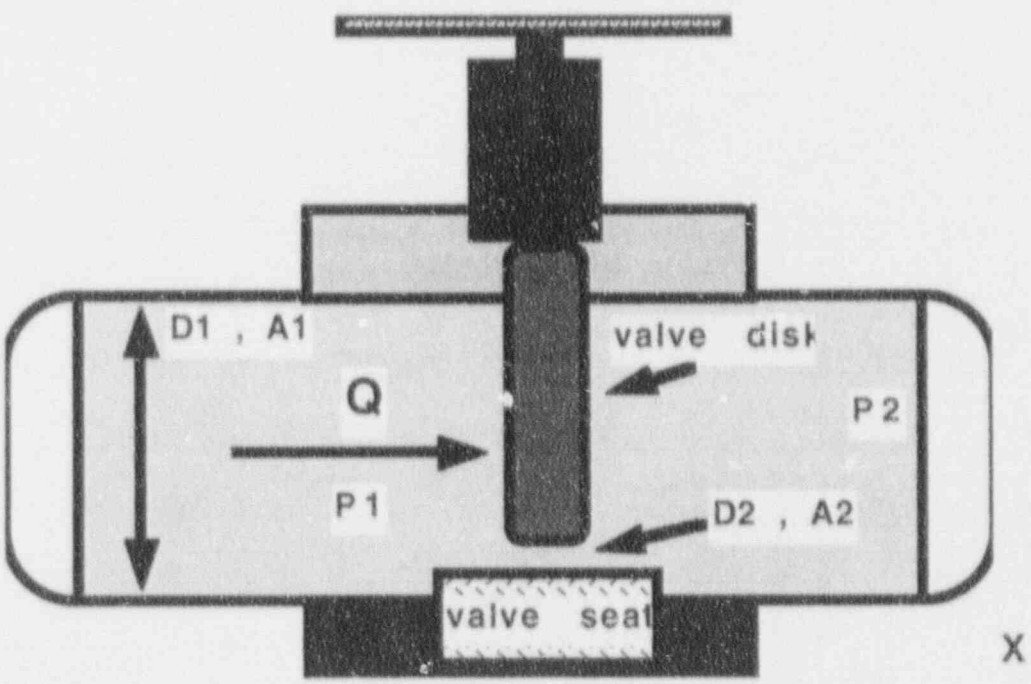
reasonable limits instead of a leakage rate for individual valves as required by IWV-3426, Analysis of Leakage Rates. Attachment 1 to this relief request provides a technical basis for the acceptance criteria. The evaluation of test results will be based on the penetration leakage rate (inboard and outboard isolation valves combined) instead of on the individual valve leakage rate as required by IWV-3427, Corrective Action.

Relief Request 2034 - Attachment 1

The following is an idealized model of valve leakage as diagramed in Figure 1. The purpose of this model is to demonstrate that leakage, typical of the type of leakage which would be created by abrasive particles being ground across the valve seat, can be measured prior to component degradation using an acceptance criteria of 20,000 standard cubic centimeters per minute (sccm). Using this acceptance criteria, leakage path size is calculated using a given differential pressure. This is typical of a problem encountered in the field when performing local leak rate testing (LLRT).

For the purpose of this calculation, the leakage path is assumed to be a square edged orifice. This assumption is representative of a scratch across a valve seat made by a abrasive particle or the type of leakage path which an LLRT is designed to measure. Using the Reactor Coolant System as an example, the normal or average particle size is 18 microns [1], or 7.1×10^{-4} inches. As the calculation will demonstrate, 20,000 sccm is a conservative acceptance criteria which will allow adequate monitoring of component degradation prior to failure. Further, a valve which fails to fully seat will produce leakage rates which are several orders of magnitude greater than the acceptance criteria used for valve testing.

FIGURE 1



Where:

Q = flowrate in standard cubic centimeters per minute (sccm)
(for this calculation the flowrate is 20000 sccm)

(P_1-P_2) = pressure differential in pounds per square inch (psid)
(for this calculation the differential pressure is 9 psid)

X = the density of the medium in pounds $_{mass}$ per cubic foot (lbs_m / ft^3)
(for this calculation the test medium is air with an assumed density of
0.076 lbs_m / ft^3) $_2$

D_1 = the full diameter of the test or component body

D_2 = the orifice or corrosive particle diameter

A_1 = the cross-sectional area of the test or component body

A_2 = the cross-sectional area of the orifice

pi = the numerical constant 3.1415927.....

Using the Bernoulli obstruction theory$_3$ for a generalized flow obstruction, which can be written as follows:

$$\frac{Q}{A_2} = \sqrt{\frac{2(P_1 - P_2)}{X\left[1 - \frac{D_2^4}{D_1^4}\right]}}$$

This theory is based on the assumptions of incompressible, steady, frictionless, flow. The validity of these simplifying assumptions for the range of test parameters of concern for valve testing (small differential pressures and low flow rates) was verified via experimentation using an LLRT machine and precisely machined orifices of various sizes. The results of this experimentation are tabulated in Table 1 of this discussion and are compared with calculated values using the same flowrates and differential pressures.

Solving for D_2^2 one obtains the following expression:

$$D_2^2 = \frac{4}{pi} A_2 = \frac{4}{pi}\left[\frac{Q}{\sqrt{\frac{2(P_1 - P_2)}{X\left[1 - \frac{D_2^4}{D_1^4}\right]}}}\right]$$

Because the orifice diameter D_2 is very small in relation to the component diameter D_1 the term

$$\left[1 - D_2^4 / D_1^4\right]$$ can be considered approximately equal to 1.

This further simplifies the expression for D_2^2 to the following:

$$D_2^2 = \frac{4}{pi} \frac{Q}{\sqrt{\frac{2(P_1 - P_2)}{X}}}$$

Inserting numerical values and the appropriate conversion factors yields:

$$D_2^2 = \frac{4}{pi}\left[\frac{20{,}000 \frac{cm^3}{min}\left(\frac{1\ in}{2.54\ cm}\right)^3}{\sqrt{\frac{2\left(9 \frac{lbs}{in^2}\right)\left(\frac{32.2\ ft}{sec^2}\right)\left(\frac{12\ in}{1\ ft}\right)\left(\frac{60\ sec}{1\ min}\right)^2}{0.076 \frac{lbs}{ft^2}\left(\frac{1\ ft}{12\ in}\right)^3}}}\right]$$

$D_2^2 = 2.06 \times 10^{-3}\ in^2$

D_2 = 0.045 in. or slightly under 3/64 "

An orifice of this size is approximately equal to the size of the maximum leakage path allowed using an acceptance criteria of 20,000 sccm. This is equivalent to 100 scratches of "normal" 18 micron size, which would represent valve wear over many cycles, or a significant leakage path 100 times the size of a path created by one 18 micron abrasive particle. Thus, a 20,000 sccm criteria can be utilized to monitor for degradation of several valves in the penetration group and is sensitive enough to identify significant problems.

Table 1

flow (sccm) ± 3 %	diff.press.(psid) ± 3 %	test dia.(in) ± .02 %	calc. dia.(in)	%diff.
1950	9.48	0.0156	0.0139	11.4
7000	9.45	0.0313	0.0263	16.0
94000	5.00*	0.125	0.113	9.76

* this was the highest differential pressure the LLRT stand could maintain at this large of an orifice size.

** nitrogen testing medium - density = 0.07307 lb_m/ft^3_2

As Table 1 shows, the error between the calculated data and the experimentally measured data is acceptable. The Bernoulli model used in this calculation may be considered ideal and is not necessarily identical to what is encountered in the field. However, for the range of values required, the additional effects of non-ideal conditions, friction and compressibility, etc. are negligible when compared to field conditions and instrument accuracies.

Reference 1: CPS Plant Modification RT-029 FECN 24600
Reference 2: CRC Handbook of Tables for Applied Engineering Science
Reference 3: Fluid Mechanics Second Ed.; White F. M.; McGraw Hill

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 3001 (Revision 1)

COMPONENT INFORMATION

These pumps (see Table 3001-1) are to safely shutdown the reactor or to mitigate the consequences of an accident. They include all of the pumps in the IST Program except the RCIC Pump. These pumps are identified in Table 3001-1 by their Equipment Identification Number, Name, and ASME Section III Code Class.

CODE REQUIREMENT

The ASME Code Section XI, Subsection IWP-4310 requires the measurement of these pumps' bearing temperature annually.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reasons:

The measurement of these pumps' bearing temperature annually does not increase any confidence in the reliability of the pumps because bearing temperature rises just minutes prior to failure of the pump bearing. In order to measure this parameter, bearing temperature is required to be stabilized per IWP-3500(b), which requires the pump to be running at least an hour. Since this bearing temperature measurement does not increase any confidence in the pumps' reliability and will reduce the pumps' life due to the time required to run the pump, this measurement does not provide meaningful data. Therefore, reasurement of these pumps' bearing temperatures annually as required by the Code will not be performed.

ALTERNATE TESTING PROPOSED

None.

Table 3001-1 (Revision 1)

Identification Number	Pump Name	ASME Section III Code Class
1C41-C001A	Standby Liquid Control (SLC) Pump A	2
1C41-C001B	Standby Liquid Control Pump B	2
1D001PA	Diesel Oil Transfer Pump A	3
1D001PB	Diesel Oil Transfer Pump B	3
1D001PC	Diesel Oil Transfer Pump C	3
1E12-C002A	Residual Heat Removal (RHR) Pump A	2
1E12-C002B	Residual Heat Removal Pump B	2
1E12-C002C	Residual Heat Removal Pump C	2
1E12-C003	Waterleg Pump	2
1E21-C001	Low Pressure Core Spray (LPCS) Pump	2
1E21-C002	Waterleg Pump	2
1E22-C001	High Pressure Core Spray (HPCS) Pump	2
1E22-C003	Waterleg Pump	2
1E51-C003	Waterleg Pump	2
1FC02PA	Fuel Pool Cooling and Clean-Up Pump A	3
1FC02PB	Fuel Pool Cooling and Clean-Up Pump B	3
1SX01PA	Shutdown Service Water Pump A	3
1SX01PB	Shutdown Service Water Pump B	3
1SX01PC	Shutdown Service Water Pump C	3
0VC08PA	Control Room HVAC Chilled Water Pump A	3
0VC08PB	Control Room HVAC Chilled Water Pump B	3

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 3002 (Revision 2)

COMPONENT INFORMATION

This relief request refers to three (3) Diesel Fuel Oil (DO) transfer pumps (1DO01PA, 1DO01PB, and 1DO01PC). These pumps are used to transfer diesel fuel from the diesel storage tanks to the diesel fuel day tanks. The pumps are ASME Section III, Code Class 3. All of the pumps are Delaval IMO type N3DBS-137. CPS tests the pumps at a fixed differential pressure (DP) of 13 psid, with baseline flowrates ranging from 16.424 to 18.13 gpm.

CODE REQUIREMENTS

The ASME Code, Section XI, Subsection IWP-3210 tabulates the allowable ranges of inservice test quantities (flowrate) in relation to the reference or baseline values. Table IWP-3100-2 requires an acceptable flowrate range of 0.94 to 1.02 of baseline flowrate, and an Alert range of 0.9 to 1.03 of baseline flowrate.

RELIEF REQUEST/JUSTIFICATION

Because the DO pumps operate at a low flow and the Code specified acceptable ranges are based upon a percentage of the baseline, an increase in flow of less than 0.5 gpm (1.02 x baseline flowrate) is sufficient to force any of the pumps into the Required Action range. (SEE GRAPH 1)

The design required fuel delivery rates for each of the diesel generators (supplied by the day tanks which the DO pumps maintain) is considerably less than the rated fuel delivery of any of the three DO pumps. The diesel engines are equipped with skid mounted pumps which supply fuel oil at a rate of 4 gpm per engine. The engines consume less than 3 gpm per engine with the excess routed back to the day tank. Pumps 1DO01PA and 1DO01PB supply 2 engines each and therefore 8 gpm has been determined to be the limiting flow rate required for these pumps to ensure adequate fuel delivery. Pump 1DO01PC supplies only 1 engine and therefore has a limiting flow rate of 4 gpm.

CPS believes that due to the low flow characteristics of the DO pumps and the significant margin of safety between the flow requirements of the diesel generator and the baseline flowrate provided by the DO pumps, compliance with the Code requirements constitute a hardship with no appreciable gain in safety.

ALTERNATE TESTING PROPOSED

Illinois Power will utilize the following Allowable, Alert, and Action ranges for Diesel Oil pump flowrates.

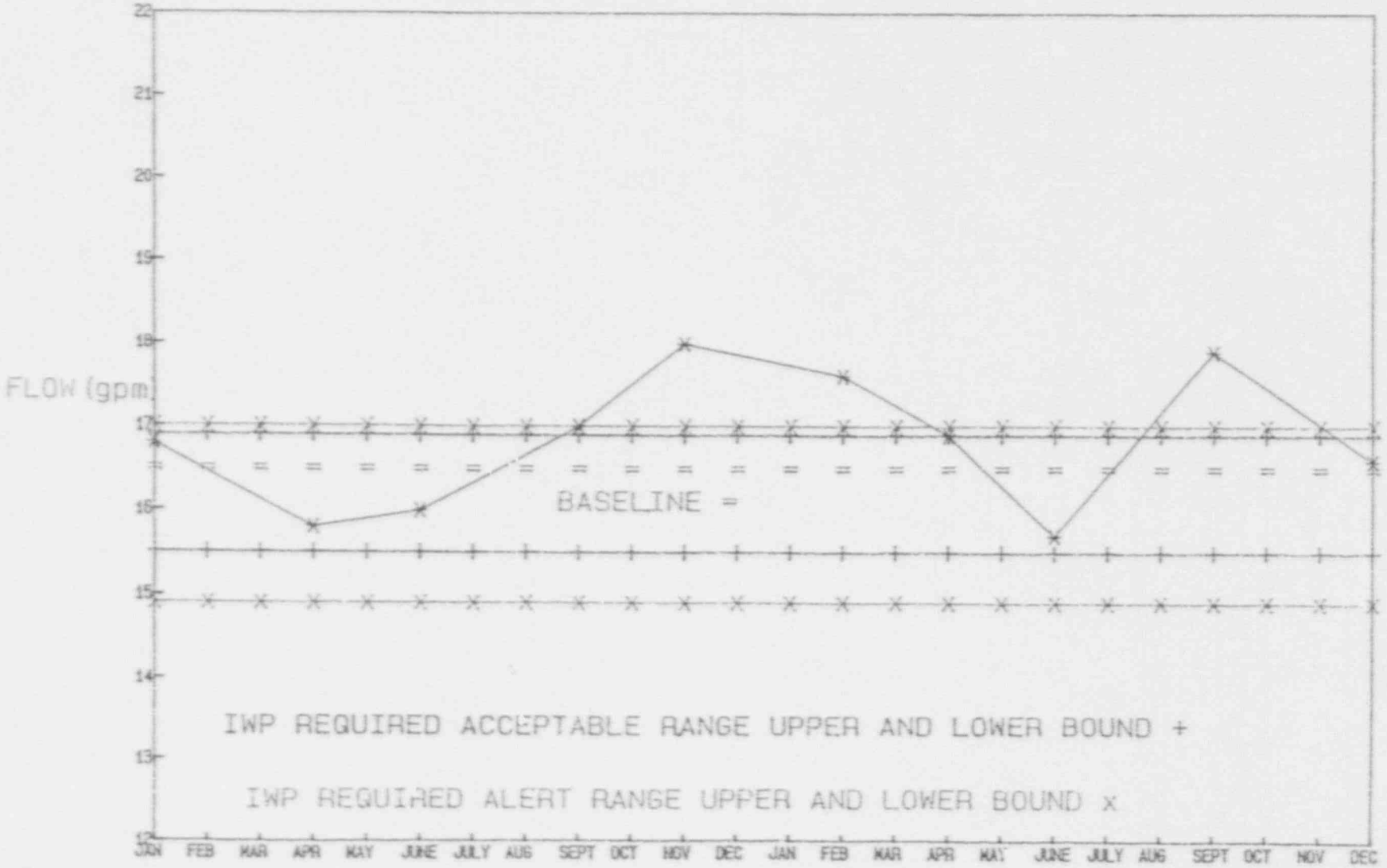
Acceptable Range	≥ 14 gpm and ≤ 19 gpm
Alert Range	≥ 13 and <14 gpm or ≥ 19 and < 20 gpm
Action Range	< 13 gpm > 20 gpm

Based upon CPS's operating experience, CPS feels that the revised upper ranges will provide good indications of pump degradation without the unnecessary burden of requiring the pumps to be tested on an increased frequency or declared inoperable for minor (< 0.5 gpm) variations in flowrates. (SEE GRAPH 2)

PUMP 1D001PA

(GRAPH 1)

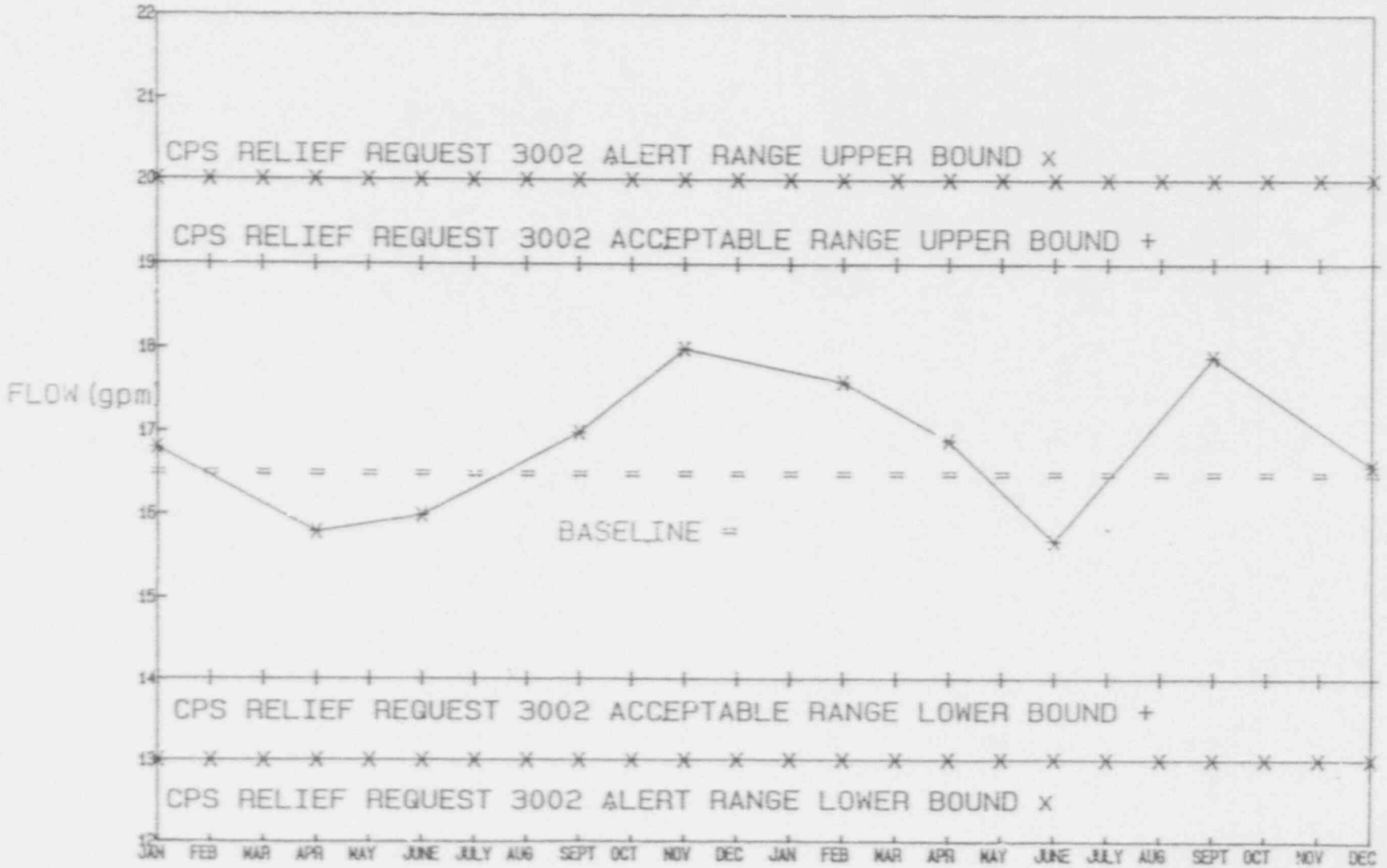
BASED UPON A DIFFERENTIAL PRESSURE (DP) OF 13 psid



PUMP 1D001PA

(GRAPH 2)

BASED UPON A DIFFERENTIAL PRESSURE (DP) OF 13 psid



ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 3003 (Revision 1)

COMPONENT INFORMATION

The Standby Liquid Control (SLC) Pumps (1C41-C001A and C001B) supply a neutron absorbing solution into the reactor in sufficient concentration and quantity to overcome the maximum positive reactivity. They are ASME Section III Code Class 2 pumps. These are positive displacement pumps which are highlighted on the attached drawing.

CODE REQUIREMENT

The ASME Code Section XI, Subarticle IWP-4600 requires measuring the pump's flow rate. Subarticle IWP-4100 specifies the requirements for instrument accuracies, ranges, etc.

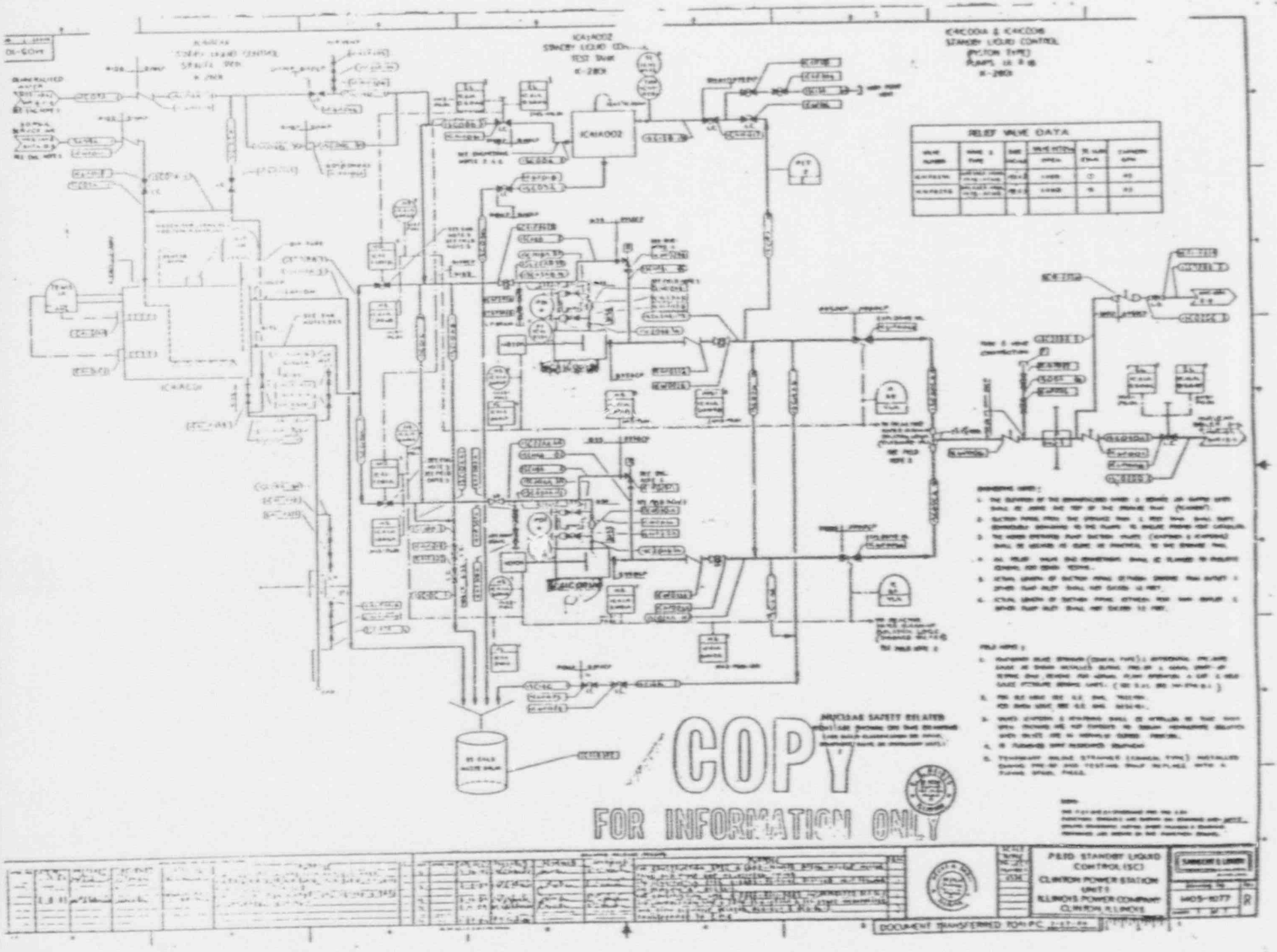
RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the Code requirements for the following reason:

These pumps do not have a flow rate measuring instrument installed which meets the above Code requirements.

ALTERNATE TESTING PROPOSED

Illinois Power Company will calculate the flow rate (Q) of the SLC pump by dividing the change in level of the SLC test tank by the time the SLC pump is in operation.


RELIEF VALVE DATA
COPY
FOR INFORMATION ONLY
P&ID STANDBY LIQUID CONTROL (SC)
CLINTON POWER STATION UNIT 1
ILLINOIS POWER COMPANY
CLINTON, ILLINOIS
M05-1077
DOCUMENT TRANSFERRED FOR IPC

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 3005

COMPONENT INFORMATION

The Standby Liquid Control Pumps (1C41-C001A and C001B) supply a neutron absorbing solution into the reactor in sufficient concentration and quantity to overcome the maximum positive reactivity. These pumps are ASME Section III Code Class 2 and are highlighted on the attached drawing.

CODE REQUIREMENT

The ASME Code Section XI, Subsection IWP-3500(a) requires that when measurement of the bearing temperature is not required, these pumps shall be run at least five (5) minutes under conditions as stable as the system permits. At the end of this time, at least one measurement or observation of each of the quantities specified shall be made and recorded.

RELIEF REQUEST/JUSTIFICATION

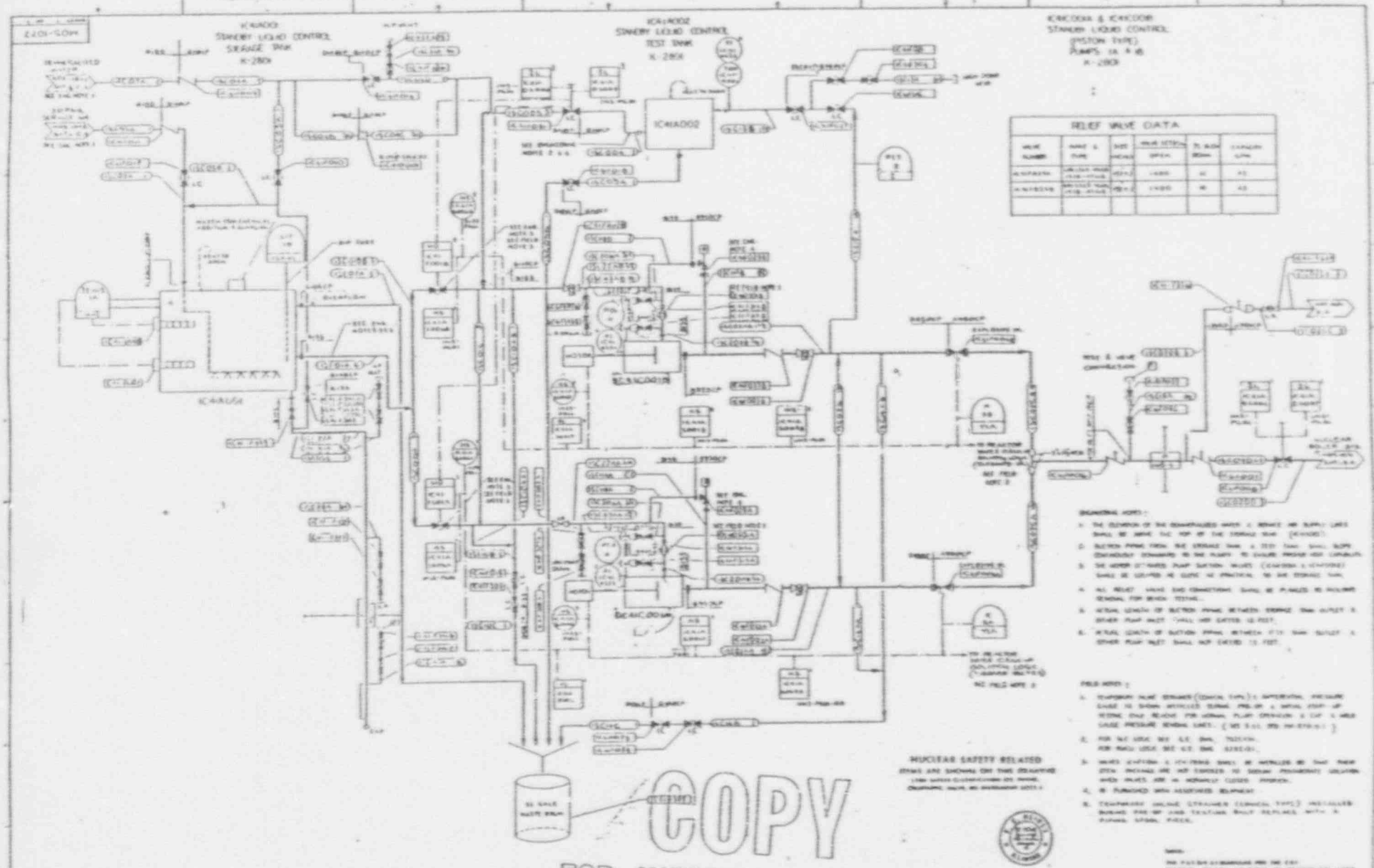
Illinois Power Company requests relief from the Code requirements for the following reasons:

Plant demineralized water is utilized to perform the quarterly tests for these pumps. The discharge of these pumps is collected in the Test Tank. The capacity of the Test Tank does not permit running these pumps for five (5) minutes.

Since these pumps are positive displacement type pumps and the inlet water is at a constant temperature, the flow conditions will be stabilized within a few seconds of starting the pumps. Letting the pumps run one (1) minute before measuring/observing the required parameters will ensure the flow conditions are stabilized.

ALTERNATE TESTING PROPOSED

Illinois Power Company will perform the required testing quarterly and all of the required parameters will be observed/measured and recorded after the pumps have been running at least one minute but prior to running for five minutes.


IC41A003
STANDBY LIQUID CONTROL
STORAGE TANK
X-280A
IC41A002
STANDBY LIQUID CONTROL
TEST TANK
X-280X
IC41C003A & IC41C003B
STANDBY LIQUID CONTROL
(PISTON TYPE)
PUMPS 1A & 1B
X-280A
RELIEF VALVE DATA
IC41A003A
IC41C003A
IC41C003B
COPY
FOR INFORMATION ONLY
NUCLEAR SAFETY RELATED
P&ID STANDBY LIQUID CONTROL (SLC)
CLINTON POWER STATION
UNIT 1
ILLINOIS POWER COMPANY
CLINTON, ILLINOIS
M05-1077

ILLINOIS POWER COMPANY
Clinton Power Station

ASME Section XI Relief Request

RELIEF REQUEST 3006 (Revision 1)

COMPONENT INFORMATION

This relief request pertains to the four (4) water-leg pumps (1E12-C003, 1E21-C002, 1E22-C003, and 1E51-C003) in the CPS IST program. These pumps are required to maintain the water level in the associated ECCS systems to ensure the prevention of a water-hammer transient in the event of an ECCS initiation. In addition, these pumps have similar characteristics. All four are Gould model 3196 ST, with the primary difference being impeller diameter. They are tested at flows ranging from 50 to 64.5 gpm with baseline differential pressures (DP) ranging from 44.4 to 48.3 psid for the 1E12-C003, 1E21-C002, and 1E22-C003 pumps and 29.4 psid for 1E51-C003. All pumps are ASME Code Class 2.

CODE REQUIREMENTS

The ASME Code Section XI, Subsection IWP-3210 tabulates the allowable and alert ranges of inservice test quantities (differential pressure (DP)) in relation to the reference, or baseline, values. Table IWP-3100-2 requires an acceptable DP range of 0.93 baseline DP to 1.02 baseline DP and an alert range of 0.9 baseline DP to 1.03 baseline DP.

RELIEF REQUEST/JUSTIFICATION

Because the water-leg pumps operate at a low DP and the Code specified acceptable ranges are based on a percentage of the baseline, a small increase in DP can result in the pump reaching the alert or action range when the pump is operating within design parameters.

Using data for the HPCS water-leg pump (1E22-C003) as a representative example, which has a baseline DP of 48.5 psid, the Code-required acceptable range varies from 45.1 to 49.5 psid, or less than 4.4 psid (SEE GRAPH 1). Likewise the Code-required alert range for 1E22-C003 varies from 43.7 to 50 psid, for a range of 6.3 psid.

CPS believes the lower acceptable and alert range boundaries (0.93 and 0.9 of baseline DP) are achievable without undue hardship. However, based upon the Code required upper acceptable and alert range boundaries of 1.02 and 1.03 baseline DP) a deviation of only 1.0 psid above baseline DP is sufficient to force any of the CPS waterleg pumps onto increased frequency, and an increase greater

than 1.5 psid above the baseline DP will place the pumps in the action range.

ALTERNATE TESTING PROPOSED

Illinois Power will utilize the following allowable, alert, and action ranges for water-leg pump differential pressure.

Acceptable Range	(0.93 to 1.05) x (baseline dp value)
Alert Range	(0.90 to 1.10) x (baseline dp value)
Action Range	< (0.90) x (baseline dp value) > (1.10) x (baseline dp value)

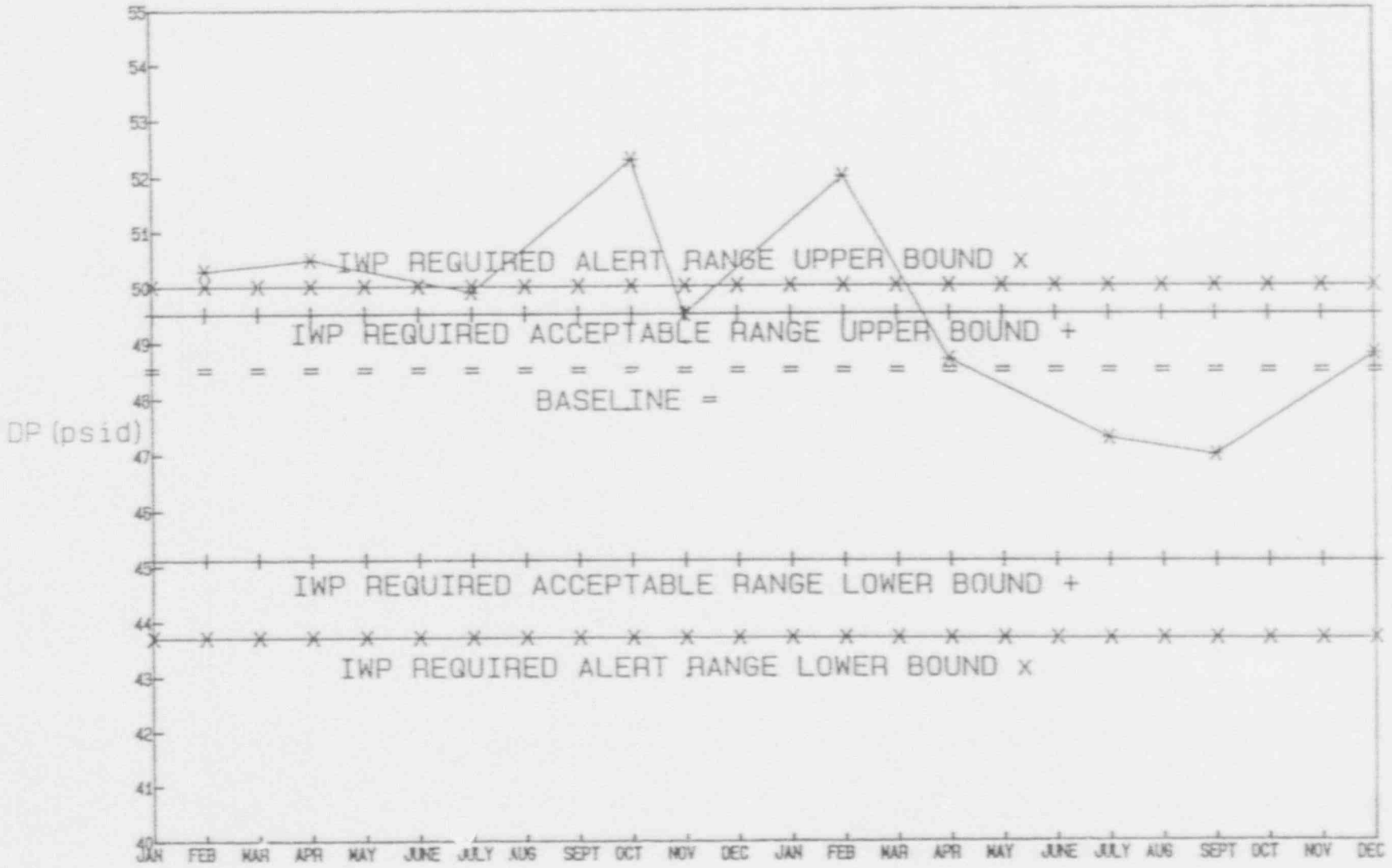
Based upon CPS's operating experience, CPS feels that the revised upper ranges will provide good indications of pump degradation without the unnecessary burden of requiring the pumps to be tested on increased frequency or declaring them inoperable for minor (1 to 2 psid) variations in DP (SEE GRAPH 2). CPS has evaluated minor fluctuations of this type and has determined that this performance is not an indication of pump degradation, and the pumps are operating within design allowable limits.

In addition, as these pumps are normally running, line pressure is continu lly monitored via pressure transmitters by the Main Control Room and any failure will be immediately observed by Control Room personnel.

PUMP 1E22-C003

(GRAPH 1)

BASED UPON A FLOW RATE (Qr) OF 64.5 gpm

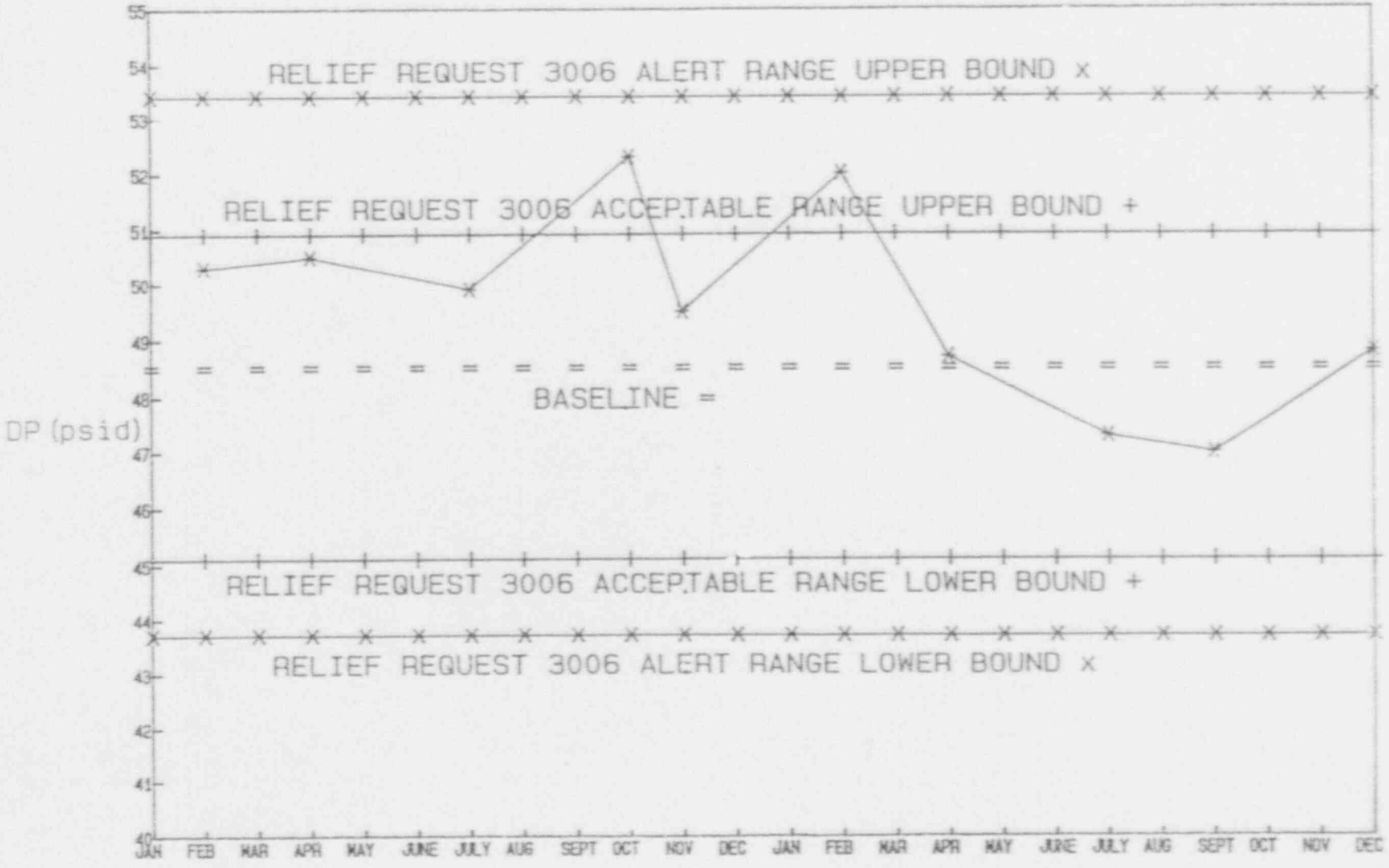


199^ - 1991

PUMP 1E22-C003

(GRAPH 2)

BASED UPON A FLOW RATE (Qr) OF 64.5 gpm



199^ - 1991

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 4001 (Revision 1)

COMPONENT INFORMATION

Several ASME Class 2 lines are open-ended as defined by Code Case N-408. These lines meet the Code Case requirements of not containing water during normal plant operating conditions. Page 2 of this request lists each line for which relief from examination is requested.

CODE REQUIREMENT

The ASME Code Section XI, Subsection IWC-1220, IWC-2500 and Table IWC-2500-1 require that welds in Class 2 piping systems be selected for examination. Subsection IWF-2510(a) and Table IWF-2500-1 require selection of component supports for those components required to be examined under Subsection IWC-2500.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests that the lines on page 2 and associated component supports be exempt from the Code requirements for the following reasons:

Each of these lines is open-ended beyond the last shutoff valve and does not contain water during normal plant operating conditions. Code Case N-408,(a)(6) and (b)(4), allows lines meeting the above conditions to be exempt from the Code requirements of IWC-2500. Although Illinois Power does not intend to invoke this Code Case in it's entirety, this relief request is based on the Code Case's exemption from examining certain open-ended pipes and the fact that leakage from any of the associated welds on these pipes would be insignificant and would have no adverse safety impact on the plant.

ALTERNATE REQUIREMENTS PROPOSED

NONE.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST

RELIEF REQUEST NO. 4001

Class 2 Open-Ended Lines

The following lines are in open-ended systems and require relief from examination:

1DG08AA-36"
1DG08AB-36"
1DG08AC-24"
1DG08BA-24"
1DG08BB-24"
1DG08CA-20"
1DG08CB-20"
1DG10AA-36"
1DG10AB-36"
1DG10AC-24"
1DG27AA-16"
1DG27AB-16"
1DG27AC-16"

1HG05AA-6"
1HG05AB-6"
1HG05BA-6"
1HG05BB-6"
1HG05CA-6"
1HG05CB-6"
1HG06AA-10"
1HG06AB-10"
1HG06AC-10"
1HG06AD-10"

1RH30BA-12"
1RH30BB-12"
1RH30CA-12"
1RH30CB-12"
1RH30DA-12"
1RH30DB-12"

1RI08B-12"
1RI08C-12"

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST
RELIEF REQUEST NO. 4003 (Revision 1)

COMPONENT INFORMATION

All component supports requiring VT-3 and/or VT-4 examinations.

CODE REQUIREMENT

Subarticle IWF-2500 and Table IWF-2500-1 require that a visual examination, VT-3 and/or VT-4, be performed each inspection interval for the supports described above.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from performing any VT-4 examinations for the following reasons:

1. The definition of VT-4 examination in the 80W81 Code does not clearly identify the attributes to be considered in developing the inspection criteria.

2. Functional testing of snubbers required by Clinton Power Station (CPS) Technical Specifications is more stringent than this Code requirement.

3. The 83W84 Code has been clarified by combining the Visual Examinations VT-3 and VT-4.

If relief is granted, Illinois Power will update the applicable procedures to not only delete the references to VT-4, but to include the revised VT-3 examination requirements from the 83W84 Code in our program.

ALTERNATE TESTING PROPOSED

Illinois Power will perform VT-3 examinations using the definition from the 83W84 Code in lieu of performing VT-3 and VT-4 examinations in accordance with 80W81 requirements. Functional testing will be performed in accordance with CPS Technical Specifications.

ILLINOIS POWER COMPANY
CLINTON POWER STATION
SECTION XI RELIEF REQUEST
RELIEF REQUEST NO. 4004 (REV. 1)

COMPONENT INFORMATION

Hydraulic and mechanical snubbers associated with the piping lines included in the Clinton Power Station (CPS) Inservice Examination Program Plan.

CODE REQUIREMENT

The ASME Code specifies visual inspection frequencies for the above supports in Table IWF-2500-1 and functional testing frequencies in Subarticle IWF-5400. In addition, corrective actions with regard to selecting additional supports are specified in IWF-2420, IWF-2430, and IWF-5500.

RELIEF REQUEST/JUSTIFICATION

Illinois Power Company requests relief from the requirements identified above with regard to frequency of inspection and testing, and corrective action.

This relief request is justified because the CPS Technical Specification 4.7.4 specifies inspection and testing frequencies for these supports which are generally more restrictive than the Code requirements. Tracking the completion of inspection and testing activities with regard to both ASME Code and technical specification requirements creates additional administrative work without significant benefit in snubber reliability.

ALTERNATE TESTING PROPOSED

Visual inspection and functional testing frequencies and corrective action for selecting additional or successive supports for testing will be as specified by CPS Technical Specifications. Visual inspection of those snubbers initially selected for functional testing during each outage will be performed in accordance with ASME Code requirements for VT-3 inspection. All other visual inspections will be performed in accordance with CPS Technical Specification requirements.

Revision 11

June 18, 1992

?PENDIX V

PUMP AND VALVE TESTING PROGRAM PLAN

Submitted By: R. A. Rohrig [signature]

[illegible]d: Steve B. Bell [signature]

[illegible] ncurrence: [signature]

M5546/M136

APPENDIX V

PUMP AND VALVE TESTING PROGRAM PLAN
RECORD OF REVISION SHEET

Revision/Date	Affected Pages
0/ 12/26/85	Initial Issue as CPS 1887.00
1/ 03/18/86	Complete Revision
2/ 07/06/87	Complete Revision
3/ 08/24/87	Complete Revision
4/ 03/01/88	Complete Revision
5/ 05/31/88	Complete Revision
6/ 08/17/88	Revised Table II-page 87
7/ 05/26/89	Complete Revision
8/ 08/31/90	Revised Table II - pages 33 and 53 and Key to Table II
9/ 05/15/91	Complete Revision
10/ 03/11/92	Issued in response to NRC Safety Evaluation Report
11/ 06/15/92	Complete Revision

ILLINOIS POWER COMPANY
CLINTON POWER STATION

PUMP AND VALVE TESTING PROGRAM PLAN
(REVISION 11)

M5546/M136

I. INTRODUCTION

This program plan describes how safety-related pumps and valves will be tested to satisfy the requirements of the ASME Boiler and Pressure Vessel Code Section XI, Rules for the Inservice Inspection of Nuclear Power Plant Components, 1980 Edition, Winter 1981 Addenda and any additional requirements as listed below. The requirements of this edition and addenda will be used during the first 10-year inspection interval or until a later edition is selected to be used. Later editions must be endorsed in 10CFR50.55a or approved by the appropriate enforcement and regulatory agencies prior to their use. The requirements of this program plan include the relief requests as documented in Appendix III of the ISI Manual.

Revision to this program plan will be controlled by Illinois Power. Plant Modifications/Field Alterations which could affect this plan will be reviewed by personnel responsible for implementation of ISI requirements to ensure that changes are identified and the plan is revised to remain current. These identified changes to the plan may be implemented prior to revising the plan if approved by personnel responsible for implementation of ISI requirements

The following documents have been reviewed and incorporated into the ISI Manual as necessary:

1) NRC Letter dated September 22, 1987, which attached "NRR's Position on When Technical Specification LCO Action Statement Clock Begins When IST Surveillance Results Are in the Action Range."

2) IE Information Notice 86-50 "Inadequate Testing to Detect Failures of Safety-Related Pneumatic Components or Systems." Illinois Power Review letter Y-86498 dated November 18, 1987.

3) IE Information Notice "Check Valve Inservice Testing Program Deficiencies" Illinois Power review letter Y-90126 dated December 6, 1988.

4) NRC Generic Letter 89-04 "Guidance on Developing Acceptable Inservice Testing Programs" Illinois Power review letter Y-91415 dated May 11, 1989.

5) NRC Safety Evaluation Report of CPS ISI Program dated September 30, 1991.

II. PUMP TESTING

A. Scope

The requirements of this program plan shall be applied to safety-related pumps which are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident and are provided with an emergency power source. The pumps which are included in this plan are identified in Table I of this plan.

B. Frequency of Testing

Inservice tests of pumps shall be performed every 3 months during normal plant operations. This frequency shall be maintained during extended cold shutdowns and refueling outages whenever possible. If this frequency cannot be maintained during these shutdown periods, the pump(s) shall be tested within 1 week of the plant being returned to normal operating conditions.

C. Inservice Test Requirements

The following test parameters shall be observed or measured during inservice testing of pumps.

1. Speed (Variable speed pumps only).
2. Inlet pressure (measured prior to pump startup and during testing).
3. Differential pressure.
4. Flow rate.
5. Vibration amplitude.
6. Proper lubrication level for those pumps not lubricated by the fluid being pumped or having grease lubricated bearings.

D. Baseline Values

1. Pump testing baseline reference values have been established for all pumps included in this program. If additional sets of reference values are needed, they shall be established in accordance with IWP-3112.
2. After a pump has been replaced, a new set or sets of reference values shall be determined from the results of the first inservice test run after the pump is put into service.

3. When a reference value or set of values have been affected by repair or routine servicing of the pump, a new reference value or set of values shall be determined or the previous value reconfirmed by an inservice test run prior to returning the pump to normal service. Deviations between the previous and new set of reference values shall be identified, and verification that the new values represent acceptable pump operation shall be placed in the test records.

E. Test Procedures

The procedures utilized for inservice testing shall include the following requirements.

1. Each pump shall be run at least 5 minutes under conditions as stable as the associated system permits. At the end of this time, at least one measurement or observation of each of the quantities shall be made and recorded.

2. The test flow path to be used shall be identified.

3. Instruments which measure the various test quantities shall be identified by instrument number for permanent instruments or type and location if test gauges are to be used.

4. Reference values and limits for the quantities to be measured shall be provided in the procedure.

5. The resistance of the system shall be varied until either the measured differential pressure or the measured flow rate equals the corresponding reference value with a tolerance of ±2 percent. The test quantities shall then be measured of observed and recorded.

F. Analysis of Results/Corrective Action

1. The test results analysis shall consist of a comparison of the measured test quantities and the ranges defined in IWP-3210 and as modified by Relief Requests 3002 and 3006.

2. When test quantities fall within the alert range identified, the testing frequency shall be doubled until the cause of the deviation is determined and the condition corrected.

3. When test quantities fall within the required action range, the pump shall be declared inoperable and not returned to service until the cause of the deviation is determined and the condition corrected.

4. When a test shows deviation greater than allowed, the instruments involved may be recalibrated and the test rerun.

5. After the cause of deviations to test quantities has been determined, the condition shall be corrected by either repairing or replacing the pump or by performing an analysis to demonstrate that the condition does not impair pump operability and to ensure that the pump will perform its function. A new set of reference values shall be established after such an analysis.

G. Inservice Test Records

1. Summary Listing

The Supervisor-ISI shall maintain a log of the pumps in this program and the current status of the program.

2. Pump Records

Manufacturers' pump records shall be maintained in the IP Records Center.

3. Record of Tests

The pump test record shall include the following information:

a. Date of test.

b. Measured and observed quantities.

c. Instruments used.

d. Comparisons with allowable ranges of test values.

e. Analysis of any deviations in test quantities.

f. Corrective action requirements.

g. Signatures of personnel conducting the test and analyzing the results.

H. Instruments

1. Accuracy

Instrument accuracy shall be within the following limits:

a. Pressure - ± 2% of full scale.

b. Differential pressure - ± 2% of full scale.

c. Flow rate - ± 2% of full scale.

d. Speed - ±2 of full scale.

e. Vibration amplitude - ± 5% of full scale.

f. Temperature - ± 5% of full scale.

2. Range

The full scale range of each instrument shall not exceed 3 times the reference value of the parameter being measured.

3. Calibration

Instruments shall be calibrated in accordance with schedules and procedures established for each instrument.

III. VALVE TESTING

A. Scope

The requirements of this program plan apply to certain safety-related valves (and their actuating and position indicating systems) which are required to perform a specific function in shutting down the reactor to a cold shutdown condition or in mitigating the consequences of an accident. The following valves are exempt from the requirements of this plan:

1. Valves used for operating conveniences (such as manual vent, drain, instrument, and test valves).

2. Valves used for system control (such as pressure regulating valves).

3. Valves used only for maintenance.

4. External control and protection systems responsible for sensing plant conditions and providing signals for valve operation.

The valves which are to be tested under this plan and their ASME Category are listed in Table II.

B. Frequency of Testing

1. Seat leakage tests shall be performed at least once every 2 years.

2. Valve exercising and stroke timing shall be performed every 3 months unless such testing is not practical during normal plant operations. Those instances where this frequency is not practical shall be identified.

3. Relief valve setpoints shall be verified in accordance with a schedule that provides for all applicable relief valves to be tested every 5 years.

4. At least 20% of the charges in explosively actuated valves shall be removed, fired, and replaced every 2 years with charges from a fresh batch. A sample charge from the fresh batch shall have been tested satisfactorily. Charges shall not be older than 10 years.

5. Valves with remote position indication shall be observed at least once every 2 years to verify that valve indication . ' accurately indicated.

6. When systems are declared inoperable or not required to operate for extended periods, the exercising and stroke timing schedule need not be followed; however, within 30 days prior to returning the system to operable status, the valves shall be tested as applicable and the test frequency resumed.

7. Illinois Power Company will perform testing during cold shutdowns as follows:

   a. Testing shall commence no later than 48 hours after cold shutdown is reached, and continue until complete or the plant is ready to return to power.

   b. Completion of all valve testing is not a prerequisite to return to power.

   c. Any testing not completed during one cold shutdown will be performed during any subsequent cold shutdowns starting from the last test performed at the previous cold shutdown.

d. For planned cold shutdowns, where ample time is available for testing all of the valves identified which require the cold shutdown test frequency, all will be tested although testing may not begin within 48 hours.

8. Where Table II identifies frequencies which are more restrictive than ASME Code requirements, the CPS Technical Specification tolerance (4.0.2) may be utilized, provided that the interval between tests does not exceed the requirements of the CPS ISI Program Manual and Appendices.

C. Inservice Test Requirements

The following table identifies the types of tests required for each valve.

CATEGORY	VALVE FUNCTION	SEAT LEAKAGE TEST	STROKE TIME TEST	EXERCISE TEST	SPECIAL TEST
A	Active	Yes	Yes	Yes	No
A	Passive	Yes	No	No	No
B	Active	No	Yes	Yes	No
B	Passive	No	No	No	No
C-Relief	Active	No	No	No	Yes
Valves	Passive	No	No	No	No
C-Check	Active	No	No	Yes	No
Valves	Passive	No	No	No	No
D	Active	No	No	No	Yes
D	Passive	No	No	No	No

D. Baseline Values

1. Preservice baseline values have been established for valves included in this program.

2. When a valve or its control system has been replaced, repaired, or has undergone maintenance that could affect performance and prior to the time it is returned to service, it shall be tested

to demonstrate that the affected performance parameters are within acceptable limits. The results of these tests shall be used during subsequent inservice testing as appropriate.

E. Test Procedures

Test procedures utilized for inservice testing shall include the following requirements:

1. Seat Leakage Tests

a. Valve seat leakage tests shall be made with the pressure differential in the same direction as when the valve is performing its function unless on the following exceptions is taken:

i) Globe valves may be tested with pressure under the seat.

ii) Butterfly valves may be tested in either direction if their seat construction is designed for sealing against pressure from both sides.

iii) Gate valves with 2-piece disks may be tested by pressurizing between the seats.

iv) Valves (except check valves) may be tested in either direction if the functional differential pressure is 15 psi or less.

v) Types of valves in which service pressure tends to diminish overall leakage may be tested at lower than service differential pressure. In such cases, the observed leakage (l_t) shall be adjusted. This adjustment shall be made by utilizing the following formula:

$$l_f = l_t \frac{P_f}{P_t}$$

l_t = observed leakage

l_f = functional leakage

P_t = test pressure

P_f = functional pressure

b. Seat leakage shall be measured by one of the methods described in IWV-3424 or other equivalent method.

c. Seat leakage rates shall be evaluated for acceptability by comparing the test results with previous test results and the maximum permissible leakage rate.

2. Valve Exercising

a. Valves shall be exercised to the position required to fulfill their function.

b. Valve disk movement shall be determined by observing an indicator that signals the required change of disk position, or observing indirect evidence (changes in system pressure, flow rate, level, or temperature) which reflect stem or disk position.

c. Check valves which are normally open and are required to prevent reverse flow shall be tested in a manner that proves the disk travels to the seat promptly on the cessation or reversal of flow.

d. Check valves which are normally shut and whose function is to open on reversal of pressure differential shall be tested by proving that the disk moves away from the seat when the closing pressure is removed and flow through the valve is initiated, or when a mechanical force is applied to the disk.

e. Valves with fail-safe actuators shall be tested by observing the operation of the valves upon loss of actuator power.

3. Valve Stroke Timing

a. Stroke time shall be that time interval from initiation of the actuating signal to the desired position indication.

b. The stroke time of valves shall be rounded up to the nearest second.

c. For all valves except those that are air operated, the limiting value of full stroke time for valves shall be determined using the most conservative of the following values:

1) Design Specification
2) Technical Specification
3) USAR commitments
4) For valves with full stroke time less than or equal to 10 seconds the Max. Allowable Stroke Time = Initial Base Line Time x 2
5) For valves with full stroke times greater than 10 seconds the Max. Allowable Stroke Time = Initial Base Line Time x 1.5

d. For air operated valves, the limiting value shall be determined using the most conservative of the following values:

1) Design Specifications
2) Technical Specification
3) USAR commitments
4) For valves with full stroke time less than or equal to 5 seconds the Max. Allowable Stroke Time = 10 seconds (10 seconds was determined by review of all air operated valves with initial stroke times less than 5 seconds. These initial stroke times varied from 0.98 seconds to 4.93 seconds).
5) For valves with full stroke times greater than 5 seconds and less than or equal to 10 seconds the Max. Allowable Stroke Time = Initial Baseline Time x 2.
6) For valves with full stroke times greater than 10 seconds the Max. Allowable Stroke Time = Initial Baseline Time x 1.5.

4. Relief Valve Testing

Relief valve set points shall be tested in accordance with ASME PTC 25.3-1976

5. Fail-Safe Valves (Loss of Power Testing)

Valves with fail-safe actuators shall be tested by observing the operation of the valves upon loss of actuator power.

6. Position Indication Verification

Valves with remote position indicators shall be observed to verify that valve operation is accurately indicated. Position indication testing shall be satisfied with an operator at the valve to verify actual valve movement in the proper direction against remote indication.

F. Analysis of Results/Corrective Action

1. Seat Leakage Tests

If the leakage rate exceeds the maximum permissible rate the valve shall be repaired or replaced.

2. Exercising and Stroke Time

a. If a valve fails to exhibit the required change of stem or disk position or exceeds its specified limiting value of full stroke time, the valve shall be considered inoperable.

b. When corrective action is required as a result of tests performed during cold shutdown periods, the condition must be corrected prior to starting the plant up.

c. The test frequency for power operated valves shall be increased to once per month if:

i) For valves with stroke times greater than 10 seconds, the valve exhibits an increase in stroke time of more than 25% from the last test.

ii) For valves with stroke times of 10 seconds or less, the valve exhibits an increase in stroke time of more than 50% from the last test.

iii) For values which have been given a reference stroke time per Relief Request 2032, the value exhibits an increase in stroke time of greater than 50% from the reference valve.

3. Relief Valve Testing

A relief valve failing to function properly during testing shall be repaired or replaced.

4. Explosive Valve Testing

If a charge fails to fire, all charges with the same batch number shall be removed, destroyed, and replaced with charges from a fresh batch from which a sample charge shall have been tested satisfactorily.

G. Inservice Test Records

1. Summary Listing

The Supervisor-ISI shall maintain a log of the valves in this program and the current status of the program.

2. Preservice Tests

Preservice test results and manufacturers' functional test results shall be maintained in the IP Records Center.

3. Test Results

The test results records shall include the following:

- Component Identification Number
- Test Required/Performed
- Test Method
- Measured Quantities
- Acceptance criteria
- Dated signature of the individual responsible for the test.

ILLINOIS POWER COMPANY
CLINTON POWER STATION

PUMP AND VALVE TESTING PROGRAM PLAN
TABLE 1--PUMPS

EIN	EQUIPMENT NAME	TYPE OF TEST	FREQUENCY	RELIEF REQUEST
0VC08PA	Control Room HVAC Chilled Water Pump A	Pump	3 Month	3001
0VC08PB	Control Room HVAC Chilled Water Pump B	Pump	3 Month	3001
1C41-C001A	Standby Liquid Control (SLC) Pump A	Pump	3 Month	3001,3003,3005
1C41-C001B	Standby Liquid Control (SLC) Pump B	Pump	3 Month	3001,3003,3005
1DO01PA	Diesel Oil Transfer Pump A	Pump	3 Month	3001,3002
1DO01PB	Diesel Oil Transfer Pump B	Pump	3 Month	3001,3002
1DO01PC	Diesel Oil Transfer Pump C	Pump	3 Month	3001,3002
1E12-C002A	Residual Heat Removal (RHR) Pump A	Pump	3 Month	3001
1E12-C002B	Residual Heat Removal (RHR) Pump B	Pump	3 Month	3001
1E12-C002C	Residual Heat Removal (RHR) Pump C	Pump	3 Month	3001
1E12-C003	RHR Water Leg Pump	Pump	3 Month	3001,3006
1E21-C001	Low Pressure Core Spray (LPCS) Pump	Pump	3 Month	3001
1E21-C002	LPCS and RHR Loop A Water Leg Pump	Pump	3 Month	3001,3006
1E22-C001	High Pressure Core Spray (HPCS) Pump	Pump	3 Month	3001
1E22-C003	HPCS Water Leg Pump	Pump	3 Month	3001,3006
1E51-C001	Reactor Core Isolation Cooling (RCIC) Pump	Pump	3 Month	
1E51-C003	RCIC Water Leg Pump	Pump	3 Month	3001,3006
1FC02PA	Fuel Pool Cooling and Clean-Up Pump A	Pump	3 Month	3001
1FC02PB	Fuel Pool Cooling and Clean-Up Pump B	Pump	3 Month	3001
1SX01PA	Shutdown Service Water Pump A	Pump	3 Month	3001
1SX01PB	Shutdown Service Water Pump B	Pump	3 Month	3001
1SX01PC	Shutdown Service Water Pump C	Pump	3 Month	3001

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PUMP AND VALVE TESTING PROGRAM PLAN
KEY TO TABLE II -- VALVES

VALVE TYPE:

B	-	Butterfly Valve
C	-	Check Valve
CV	-	Control Valve
EFC	-	Excess Flow Check Valve
EX	-	Explosive Valve
G	-	Gate Valve
GL	-	Globe Valve
NC	-	Non-Slam Check Valve
P	-	Plug Valve
R	-	Relief Valve
SR	-	Safety Relief Valve
VR	-	Vacuum Relief Valve
MFC	-	Manual Flow Control Valve
GSC	-	Discharge Stop Check Valve
DIA	-	Diaphram Valve
2WAY	-	Two Way Valve

VALVE ACTUATOR

AO	-	Air Operated
HO	-	Hydraulic Operated
M	-	Manually Operated
MO	-	Motor Operated
SO	-	Solenoid Operated
SC	-	Self Contained

NORMAL POSITION/TEST POSITION:

O	-	Open
C	-	Closed
LO	-	Locked Open
LC	-	Locked Closed

COLD SHUTDOWN JUSTIFICATION:

Reference 1:	Revision 2 submittal; Letter U-600968 dated June 30, 1987 entitled "Clinton Power Station Inservice Testing Program".
Reference 2:	Revision 3 submittal; Letter U-601006 dated August 20, 1987 entitled "Clinton Power Station Inservice Testing Program".
Reference 3:	Revision 4 submittal; Letter U-601141 dated March 8, 1988 entitled "Clinton Power Station Inservice Testing Program".
Reference 4:	Revision 5 submittal; Letter U-601194, dated May 27, 1988, entitled "Clinton Power Station Inservice Testing Program".
Reference 5:	Technical Specification: Table 3.6.4-1 Note G
Reference 6:	Revision 8 submittal; Letter U-601736, dated September 27, 1990, entitled "Clinton Power Station Pump and Valve Testing Program Plan".
Reference 7:	Revision 10 submittal; Letter U-601949, dated April 3, 1992, entitled "Clinton Power Station Proposed Resolution of Issues Related to NRC Review of Inservice Testing Program."

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CLINTON POWER STATION

PUMP AND VALVE TESTING PROGRAM PLAN
TABLE II--VALVES
Page 1

EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
0MC009	G	4	2	A	MO	O	C	M05-1042/4;E-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
0MC010	G	4	2	A	MO	O	C	M05-1042/4;D-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
0RA026	CV	1	2	A	AO	O	C	M05-1065/7;D-8	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2032 2011,2034	
0RA027	CV	1	2	A	AO	O	C	M05-1065/7;D-7	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2032 2011,2034	
0RA028	CV	1	2	B	AO	O	C	M05-1065/7;D-6	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
0RA029	CV	1	2	B	AO	O	C	M05-1065/7;D-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
0VC010A	CV	2	3	B	AO	O	O	M05-1102/5;A-7	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
0VC010B	CV	2	3	B	AO	O	O	M05-1102/6;A-7	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
0VC017A	C	2	3	C		C	O	M05-1102/5;F-7	Exercise	3 Month		
0VC017B	C	2	3	C		C	O	M05-1102/6;F-7	Exercise	3 Month		
0VC020A	C	2	3	B		C	C	M05-1102/5;F-7	Exercise	3 Month		
0VC020B	C	2	3	B		C	C	M05-1102/6;F-7	Exercise	3 Month		
0VC022A	CV	1.5	3	B	AO	C	O	M05-1102/5;F-7	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
0VC022B	CV	1.5	3	B	AO	C	O	M05-1102/6;F-7	Stroke Time (Exercise, Loss of Power)	3 Month	2032	

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PUMP AND VALVE TESTING PROGRAM PLAN
TABLE II--VALVES
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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
0VC025A	R	1x1.5	3	C		C	O	M05-1102/5;E-6	Bench	5 Year		
0VC025B	R	1x1.5	3	C		C	O	M05-1102/6;E-6	Bench	5 Year		
1B21-F001	GL	2	1	A-P*	MO	C	C	M05-1071/2;D-4	Leak Rate Position Indication	2 Year 2 Year	2011	
1B21-F002	GL	2	1	A-P*	MO	C	C	M05-1071/2;E-4	Leak Rate Position Indication	2 Year 2 Year	2011	
1E21-F010A	NC	18	1	A/C		O	C,O	M05-1004;C-7	Exercise (Open) Leak Rate (Exercise Closed)	Cold Shutdown Cold Shutdown	2011,2034	Ref 3
1B21-F010B	NC	18	1	A/C		O	C,O	M05-1004;A-7	Exercise (Open) Leak Rate (Exercise Closed)	Cold Shutdown Cold Shutdown	2011,2034	Ref 3
1B21-F016	G	3	1	A	MO	O	C	M05-1002/1;B-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1B21-F019	G	3	1	A	MO	O	C	M05-1002/1;B-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1B21-F022A	GL	24	1	A	AO	O	C	M05-1002/1;C-2	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F022B	GL	24	1	A	AO	O	C	M05-1002/1;F-2	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F022C	GL	24	1	A	AO	O	C	M05-1002/1;A-2	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1

* Passive valve

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PUMP AND VALVE TESTING PROGRAM PLAN
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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1B21-F022D	GL	24	1	A	AO	O	C	M05-1002/1;D-2	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F024A	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F024B	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F024C	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F024D	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F028A	GL	24	1	A	AO	O	C	M05-1002/2;C-5	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F028B	GL	24	1	A	AO	O	C	M05-1002/2;F-5	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F028C	GL	24	1	A	AO	O	C	M05-1002/2;B-5	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F028D	GL	24	1	A	AO	O	C	M05-1002/2;E-5	Stroke Time (Exercise, Loss of Power) Partial Exercise Leak Rate Position Indication	Cold Shutdown 3 Month 18 Month 18 Month	2011,2034	Ref 1
1B21-F029A	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F029B	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1

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PUMP AND VALVE TESTING PROGRAM PLAN
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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1B21-F029C	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F029D	C	0.5	3	C		O	C	M10-9002/5	Exercise	Cold Shutdown		Ref 1
1B21-F032A	NC	20	1	A/C	AO	O	C,O	M05-1004;C-6	Exercise (Open) Leak Rate(Exer Closed, Loss of Power) Position Indication	Cold Shutdown Cold Shutdown 18 Month	2011,2034	Ref 3
1B21-F032B	NC	20	1	A/C	AO	O	C,O	M05-1004;A-6	Exercise (Open) Leak Rate(Exer Closed, Loss of Power) Position Indication	Cold Shutdown Cold Shutdown 18 Month	2011,2034	Ref 3
1B21-F036A	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036F	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036G	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036J	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036L	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036M	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036N	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036P	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F036R	C	0.5	3	C		C	C	M10-9002/2	Exercise	Cold Shutdown		Ref 1
1B21-F037A	VR	10	3	C		C	O,C	M05-1002/1;C-6	Exercise	Cold Shutdown		Ref 1
1B21-F037B	VR	10	3	C		C	O,C	M05-1002/1;E-6	Exercise	Cold Shutdown		Ref 1
1B21-F037C	VR	10	3	C		C	O,C	M05-1002/1;A-7	Exercise	Cold Shutdown		Ref 1
1B21-F037D	VR	10	3	C		C	O,C	M05-1002/1;D-7	Exercise	Cold Shutdown		Ref 1

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PUMP AND VALVE TESTING PROGRAM PLAN
TABLE II--VALVES
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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1B21-F037E	VR	10	3	C		C	O,C	M05-1002/1;E-4	Exercise	Cold Shutdown		Ref 1
1B21-F037F	VR	10	3	C		C	O,C	M05-1002/1;A-5	Exercise	Cold Shutdown		Ref 1
1B21-F037G	VR	10	3	C		C	O,C	M05-1002/1;A-4	Exercise	Cold Shutdown		Ref 1
1B21-F037H	VR	10	3	C		C	O,C	M05-1002/1;C-5	Exercise	Cold Shutdown		Ref 1
1B21-F037J	VR	10	3	C		C	O,C	M05-1002/1;E-7	Exercise	Cold Shutdown		Ref 1
1B21-F037K	VR	10	3	C		C	O,C	M05-1002/1;A-5	Exercise	Cold Shutdown		Ref 1
1B21-F037L	VR	10	3	C		C	O,C	M05-1002/1;D-6	Exercise	Cold Shutdown		Ref 1
1B21-F037M	VR	10	3	C		C	O,C	M05-1002/1;E-3	Exercise	Cold Shutdown		Ref 1
1B21-F037N	VR	10	3	C		C	O,C	M05-1002/1;E-5	Exercise	Cold Shutdown		Ref 1
1B21-F037P	VR	10	3	C		C	O,C	M05-1002/1;A-6	Exercise	Cold Shutdown		Ref 1
1B21-F037R	VR	10	3	C		C	O,C	M05-1002/1;D-5	Exercise	Cold Shutdown		Ref 1
1B21-F037S	VR	10	3	C		C	O,C	M05-1002/1;A-3	Exercise	Cold Shutdown		Ref 1
1B21-F039B	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1
1B21-F039C	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1
1B21-F039D	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1
1B21-F039E	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1
1B21-F039H	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1
1B21-F039K	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1
1B21-F039S	C	0.5	3	A/C		C	O,C	M10-9002/1	Leak Rate (Exercise)	Cold Shutdown	2029,2011	Ref 1

PUMP AND VALVE TESTING PROGRAM PLAN
TABLE II--VALVES
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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1B21-F041A	SR	8x10	1	C	AO	C	O	M05-1002/1;C-6	Position Indication Bench	2 Year 5 Year		
1B21-F041B	SR	8x10	1	B/C	AO	C	O	M05-1002/1;F-7	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F041C	SR	8x10	1	B/C	AO	C	O	M05-1002/1;B-8	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F041D	SR	8x10	1	B/C	AO	C	O	M05-1002/1;D-8	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F041F	SR	8x10	1	B/C	AO	C	O	M05-1002/1;F-5	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F041G	SR	8x10	1	C	AO	C	O	M05-1002/1;B-6	Position Indication Bench	2 Year 5 Year		
1B21-F041L	SR	8x10	1	C	AO	C	O	M05-1002/1;B-4	Position Indication Bench	2 Year 5 Year		
1B21-F047A	SR	8x10	1	B/C	AO	C	O	M05-1002/1;C-6	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F047B	SR	8x10	1	C	AO	C	O	M05-1002/1;F-8	Position Indication Bench	2 Year 5 Year		
1B21-F047C	SR	8x10	1	B/C	AO	C	O	M05-1002/1;B-5	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F047D	SR	8x10	1	C	AO	C	O	M05-1002/1;D-7	Position Indication Bench	2 Year 5 Year		

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						NORMAL	TEST					
1B21-F047F	SR	8x10	1	C	AO	C	O	M05-1002/1;F-4	Position Indication Bench	2 Year 5 Year		
1B21-F051B	SR	8x10	1	C	AO	C	O	M05-1002/1;F-6	Position Indication Bench	2 Year 5 Year		
1B21-F051	SR	8x10	1	C	AO	C	O	M05-1002/1;B-7	Position Indication Bench	2 Year 5 Year		
1B21-F051D	SR	8x10	1	C	AO	C	O	M05-1002/1;D-6	Position Indication Bench	2 Year 5 Year		
1B21-F051G	SR	8x10	1	B/C	AO	C	O	M05-1002/1;B-4	Stroke Time (Exercise, Loss of Power) Position Indication Bench	Refueling 2 Year 5 Year	2012	
1B21-F065A	G	20	2	A	MO	O	C	M05-1004;C-5	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 2 Year	2011,2034	Ref 1
1B21-F065B	G	20	2	A	MO	O	C	M05-1004;A-5	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 2 Year	2011,2034	Ref 1
1B21-F067A	GL	1.5	1	A	MO	O	C	M05-1002/2;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1B21-F067B	GL	1.5	1	A	MO	O	C	M05-1002/2;E-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1B21-F067C	GL	1.5	1	A	MO	O	C	M05-1002/2;A-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1B21-F067D	GL	1.5	1	A	MO	O	C	M05-1002/2;D-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	

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						NORMAL	TEST					
1B21-F078A	VR	10	3	C		C	O,C	M05-1002/1;C-6	Exercise	Cold Shutdown		Ref 1
1B21-F078B	VR	10	3	C		C	O,C	M05-1002/1;E-6	Exercise	Cold Shutdown		Ref 1
1B21-F078C	VR	10	3	C		C	O,C	M05-1002/1;A-7	Exercise	Cold Shutdown		Ref 1
1B21-F078D	VR	10	3	C		C	O,C	M05-1002/1;D-7	Exercise	Cold Shutdown		Ref 1
1B21-F078E	VR	10	3	C		C	O,C	M05-1002/1;E-4	Exercise	Cold Shutdown		Ref 1
1B21-F078F	VR	10	3	C		C	O,C	M05-1002/1;A-5	Exercise	Cold Shutdown		Ref 1
1B21-F078G	VR	10	3	C		C	O,C	M05-1002/1;A-4	Exercise	Cold Shutdown		Ref 1
1B21-F078H	VR	10	3	C		C	O,C	M05-1002/1;C-5	Exercise	Cold Shutdown		Ref 1
1B21-F078J	VR	10	3	C		C	O,C	M05-1002/1;E-7	Exercise	Cold Shutdown		Ref 1
1B21-F078K	VR	10	3	C		C	O,C	M05-1002/1;A-5	Exercise	Cold Shutdown		Ref 1
1B21-F078L	VR	10	3	C		C	O,C	M05-1002/1;D-6	Exercise	Cold Shutdown		Ref 1
1B21-F078M	VR	10	3	C		C	O,C	M05-1002/1;E-3	Exercise	Cold Shutdown		Ref 1
1B21-F078N	VR	10	3	C		C	O,C	M05-1002/1;E-5	Exercise	Cold Shutdown		Ref 1
1B21-F078P	VR	10	3	C		C	O,C	M05-1002/1;A-6	Exercise	Cold Shutdown		Ref 1
1B21-F078R	VR	10	3	C		C	O,C	M05-1002/1;D-5	Exercise	Cold Shutdown		Ref 1
1B21-F078S	VR	10	3	C		C	O,C	M05-1002/1;A-3	Exercise	Cold Shutdown		Ref 1
1B21-F379A	VR	2	3	C		C	O	M05-1002/1;F-7	Exercise	Cold Shutdown		Ref 1
1B21 F379B	VR	2	3	C		C	O	M05-1002/1;F-6	Exercise	Cold Shutdown		Ref 1
1B21-F379C	VR	2	3	C		C	O	M05-1002/1;F-5	Exercise	Cold Shutdown		Ref 1

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1B21-F379D	VR	2	3	C		C	O	M05-1002/1;F-4	Exercise	Cold Shutdown		Ref 1
1B21-F379E	VR	2	3	C		C	O	M05-1002/1;F-3	Exercise	Cold Shutdown		Ref 1
1B21-F379F	VR	2	3	C		C	O	M05-1002/1;E-7	Exercise	Cold Shutdown		Ref 1
1B21-F379G	VR	2	3	C		C	O	M05-1002/1;E-6	Exercise	Cold Shutdown		Ref 1
1B21-F379H	VR	2	3	C		C	O	M05-1002/1;E-5	Exercise	Cold Shutdown		Ref 1
1B21-F379J	VR	2	3	C		C	O	M05-1002/1;C-6	Exercise	Cold Shutdown		Ref 1
1B21-F379K	VR	2	3	C		C	O	M05-1002/1;C-5	Exercise	Cold Shutdown		Ref 1
1B21-F379L	VR	2	3	C		C	O	M05-1002/1;B-7	Exercise	Cold Shutdown		Ref 1
1B21-F379M	VR	2	3	C		C	O	M05-1002/1;B-6	Exercise	Cold Shutdown		Ref 1
1B21-F379N	VR	2	3	C		C	O	M05-1002/1;B-5	Exercise	Cold Shutdown		Ref 1
1B21-F379P	VR	2	3	C		C	O	M05-1002/1;B-5	Exercise	Cold Shutdown		Ref 1
1B21-F379Q	VR	2	3	C		C	O	M05-1002/1;B-4	Exercise	Cold Shutdown		Ref 1
1B21-F379R	VR	2	3	C		C	O	M05-1002/1;B-3	Exercise	Cold Shutdown		Ref 1
1B21-F433A	C	0.5	3	C		O	C	M10-9004/8	Exercise	Cold Shutdown		Ref 1
1B21-F433B	C	0.5	3	C		O	C	M10-9004/8	Exercise	Cold Shutdown		Ref 1
1B33-F019	CV	0.75	2	B	AO	O	C	M05-1072/1;E-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1B33-F020	CV	0.75	2	B	AO	O	C	M05-1072/1;E-8	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1C11-114	C	0.75	0	C		C	O	CLW-001	Exercise	10%/120 days	2024	

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						NORMAL	TEST					
1C11-115	C	0.5	O	A/C		O	C	CLN-001	Leak Rate (Exercise)	Refueling	2023,2011	
1C11-126	DIA	1	O	B	AO	C	O	CLN-001	Stroke Time (Exercise, Loss of Power)	10%/120 days	2024	
1C11-127	DIA	0.75	O	B	AO	C	O	CLN-001	Stroke Time (Exercise, Loss of Power)	10%/120 days	2024	
1C11-138	C	0.5	O	C		O	C	CLN-001	Exercise	3 Month	2025	
1C11-139	DIA	0.75	O	B	SO	C	O	CLN-001	Stroke Time (Exercise, Loss of Power)	10%/120 days	2024	
1C11-F010	GL	1	2	B	AO	O	C	CLN-001	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1C11-F011	GL	2	2	B	AO	O	C	CLN-001	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1C11-F083	GL	2	2	A	MO	O	C	M05-1078/1;E-1	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 2 Year	2011,2034	Ref 1
1C11-F122	C	2	2	A/C		O	C	M05-1078/1;C-7	Leak Rate (Exercise)	Refueling	2002,11,34	
1C11-F180	GL	1	2	B	AO	O	C	CLN-001	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year		
1C11-F181	GL	2	2	B	AO	O	C	CLN-001	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year		
1C41-F001A	GL	3	2	B	MO	C	O	M05-1077;C-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1C41-F001B	GL	3	2	B	MO	C	O	M05-1077;E-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1C41-F004A	EX	1.5	1	D		C	O	M05-1077;C-3	Explosive	Alt Refueling		
1C41-F004B	EX	1.5	1	D		C	O	M05-1077;D-3	Explosive	Alt Refueling		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1C41-F006	NC	3	1	C		C	O,C	M05-1077;D-2	Exercise (Open) Exercise (Closed)	Cold Shutdown Cold Shutdown		Ref 3 Ref 7
1C41-F029A	R	1.5x2	2	C		C	O	M05-1077;C-4	Bench	5 Year		
1C41-F029B	R	1.5x2	2	C		C	O	M05-1077;E-4	Bench	5 Year		
1C41-F033A	NC	1.5	2	C		C	O,C	M05-1077;C-4	Exercise (Open) Exercise (Full Stroke)	3 Month Cold Shutdown		Ref 3
1C41-F033B	NC	1.5	2	C		C	O,C	M05-1077;D-4	Exercise (Open) Exercise (Full Stroke)	3 Month Cold Shutdown		Ref 3
1C41-F336	C	4	1	C		C	O,C	M05-1077;E-1	Exercise (Open) Leak Rate (Exercise Closed)	Refueling Refueling	2028	
1CC049	G	10	2	A	MO	O	C	M05-1032/3;C-8	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC050	G	6	2	A	MO	O	C	M05-1032/3;C-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC053	G	4	2	A	MO	O	C	M05-1032/3;C-3	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC054	G	10	2	A	MO	O	C	M05-1032/3;C-1	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC057	G	8	2	B	MO	O	C	M05-1032/3;D-8	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1CC060	G	8	2	A	MO	O	C	M05-1032/3;C-2	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUES	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1CC071	G	4	2	A	MO	C	C	M05-1032/3;E-2	Stroke Time (Exercise) Leak Rate Position Indicat...	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC072	G	4	2	A	MO	C	C	M05-1032/3;E-1	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC073	G	4	2	A	MO	C	C	M05-1032/3;F-1	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC074	G	4	2	A	MO	C	C	M05-1032/3;F-2	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC075A	B	14	3	B	MO	O	C	M05-1032/2;E-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1CC075B	B	14	3	B	MO	O	C	M05-1032/2;C-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1CC076A	B	14	3	B	MO	O	C	M05-1032/2;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1CC076B	B	14	3	B	MO	O	C	M05-1032/2;C-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
[illegible]	G	8	2	A	MO	O	C	M05-1032/3;D-8	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1CC128	G	8	2	B	MO	O	C	M05-1032/3;C-2	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1CC280A	R	0.75x1	3	C		C	O	M05-1032/2	Bench	5 Year		

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						NORMAL	TEST					
1CC280B	R	0.75x1	3	C		C	O	M05-1032/2	Bench	5 Year		
1CM002A	EFC	0.75	2	A/C		O	C	M05-1034/1;B-7	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CM002B	EFC	0.75	2	A/C		O	C	M05-1034/1;A-7	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 4
1CM003A	EFC	0.75	2	A/C		O	C	M05-1034/1;B-4	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CM003B	EFC	0.75	2	A/C		O	C	M05-1034/1;B-7	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CM011	G	0.75	2	A	SO	O	C	M05-1034/2;C-7	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM012	G	0.75	2	A	SO	O	C	M05-1034/2;C-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM022	G	0.75	2	A	SO	C	C	M05-1034/2;D-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM023	G	0.75	2	A	SO	C	C	M05-1034/2;D-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM025	G	0.75	2	A	SO	C	C	M05-1034/2;C-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	

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						NORMAL	TEST					
1CM026	G	0.75	2	A	SO	C	C	M05-1034/2;C-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM047	G	0.75	2	A	SO	O	C	M05-1034/2;D-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM048	G	0.75	2	A	SO	O	C	M05-1034/2;D-7	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1CM051	EFC	0.75	2	A/C		O	C	M05-1034/2;C-6	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CM053	EFC	0.75	2	A/C		O	C	M05-1034/3;C-5	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CM066	EFC	0.75	2	A/C		O	C	M05-1071/1;F-3	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CM067	EFC	0.75	2	A/C		O	C	M05-1071/1;E-6	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1CY016	G	6	2	A	MO	O	C	M05-1012/6;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	 2011,2034	
1CY017	G	6	2	A	[illegible]	O	C	M05-1012/6;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	 2011,2034	
1CY020	G	3	2	B	MO	O	C	M05-1012/6;D-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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						NORMAL	TEST					
1CY021	G	3	2	B	MO	O	C	M05-1012/6;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1DG006A	R	0.75x1	3	C		C	O	M05-1035/1;E-6	Bench	5 Year		
1DG006B	R	0.75x1	3	C		C	O	M05-1035/1;D-6	Bench	5 Year		
1DG006C	R	0.75x1	3	C		C	O	M05-1035/2;E-6	Bench	5 Year		
1DG006D	R	0.75x1	3	C		C	O	M05-1035/2;D-6	Bench	5 Year		
1DG006E	R	0.75x1	O	C		C	O	M05-1035/3;E-6	Bench	5 Year		
1DG006F	R	0.75x1	O	C		C	O	M05-1035/3;D-6	Bench	5 Year		
1DG008A	DIA	1.5	O	B	SO	C	O	M05-1035/1;E-3	Stroke Time (Exercise) -Alt Procedure Stroke Time (Exercise)	3 Month 3 Month	2026	
1DG008B	DIA	1.5	O	B	SO	C	O	M05-1035/1;C-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008C	DIA	1.5	O	B	SO	C	O	M05-1035/1;F-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008D	DIA	1.5	O	B	SO	C	O	M05-1035/1;B-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008E	DIA	1.5	O	B	SO	C	O	M05-1035/2;E-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008F	DIA	1.5	O	B	SO	C	O	M05-1035/2;C-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008G	DIA	1.5	O	B	SO	C	O	M05-1035/2;F-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008H	DIA	1.5	O	B	SO	C	O	M05-1035/2;B-3	Stroke Time (Exercise) -Alt Procedure Stroke Time (Exercise)	3 Month 3 Month	2026	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1DG008J	DIA	1.5	0	B	SO	C	O	M05-1035/3;E-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG008K	DIA	1.5	0	B	SO	C	O	M05-1035/3;D-3	Stroke Time (Exercise) Stroke Time (Exercise) -Alt Procedure	3 Month 3 Month	2026	
1DG168	C	1	0	A/C		C	C	M05-1035/1;E-7	Leak Rate (Exercise) -Alt Procedure Leak Rate (Exercise)	3 Month 3 Month	2029,2011	
1DG169	C	1	0	A/C		C	C	M05-1035/1;C-7	Leak [illegible] (Exercise) -Alt Procedure Leak [illegible] se)	3 Month 3 Month	2029,2011	
1DG170	C	1	0	A/C		C	C	M05-1035/2;E-7	Lea[illegible] ise) -Alt Procedure Lea[illegible] rcise)	3 Month 3 Month	2029,2011	
1DG171	C	1	0	A/C		C	C	M05-1035/2;C-7	Lea[illegible] cise) Lea[illegible] cise) -Alt Procedure	3 Month 3 Month	2029,2011	
1DG172	C	1	0	A/C		C	C	M05-1035/3;E-7	Lea[illegible] ercise) Lea[illegible] ercise) -Alt Procedure	3 Month 3 Month	2029,2011	
1DG173	C	1	0	A/C		C	C	M05-1035/3;C-7	Leak Rate (Exercise) Leak Rate (Exercise) -Alt Procedure	3 Month 3 Month	2029,2011	
1DO001A	C	1.5	3	C		C	O	M05-1036/1;B-1	Exercise	3 Month		
1DO001B	C	1.5	3	C		C	O	M05-1036/1;B-5	Exercise	3 Month		
1DO001C	C	1.5	3	C		C	O	M05-1036/2;B-3	Exercise	3 Month		
1DO005A	R	0.75x1	3	C		C	O	M05-1036/1;C-[illegible]	Bench	5 Year		
1DO005B	R	0.75x1	3	C		C	O	M05-1036/1;C-5	Bench	5 Year		
1DO005C	R	0.75x1	3	C		C	O	M05-1036/2;C-3	Bench	5 Year		
1E12-F003A	GL	14	2	B	MO	O	O	M05-1075/4;C-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F003B	GL	14	2	B	MO	O	O	M05-1075/4;C-7	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F004A	G	20	2	A	MO	O	O,C	M05-1075/1;A-4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E12-F004B	G	20	2	A	MO	O	O,C	M05-1075/2;A-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E12-F005	R	1.5x2	2	A/C		C	O,C	M05-1075/1;B-5	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F006A	G	16	2	B	MO	C	C	M05-1075/1;A-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F006B	G	16	2	B	MO	C	C	M05-1075/2;A-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F008	G	18	1	A	MO	C	C	M05-1075/1;B-4	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 18 Month	2011,2034	Ref 1
1E12-F009	G	18	1	A	MO	C	C	M05-1075/1;B-2	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 18 Month	2011,2034	Ref 1
1E12-F011A	GL	4	2	A	MO	C	C	M05-1075/4;D-4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1E12-F011B	GL	4	2	A	MO	C	C	M05-1075/2;C-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1E12-F014A	G	18	3	B	MO	C	O	M05-1052/1;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F014B	G	18	3	B	MO	C	O	M05-1052/2;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F017A	R	1.5x2	2	A/C		C	O,C	M05-1075/1;B-6	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F017B	R	1.5x2	2	A/C		C	O,C	M05-1075/2;B-6	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F019	C	4	1	C		C	O	M05-1075/3;C-5	Exercise	Cold Shutdown		Ref 1
1E12-F021	GL	14	2	A	MO	C	C	M05-1075/3;D-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1E12-F023	GL	4	1	A	MO	C	O,C	M05-1075/2;C-5	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 18 Month	2011,2034	Ref 1
1E12-F024A	G	14	2	A	MO	C	O,C	M05-1075/1;C-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1E12-F024B	G	14	2	A	MO	C	O,C	M05-1075/2;C-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1E12-F025A	R	1x1.5	2	A/C		C	O,C	M05-1075/1;D-4	Leak Rate Bench	2 Year 5 Year	2011,2034	
1E12-F025B	R	1x1.5	2	A/C		C	O,C	M05-1075/2;E-5	Leak Rate Bench	2 Year 5 Year	2011,2034	
1E12-F025C	R	1x1.5	2	A/C		C	O,C	M05-1075/3;F-3	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F026A	G	4	2	B	MO	C	C	M05-1075/4;E-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

ILLINOIS POWER COMPANY
CLINTON POWER STATION

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F026B	G	4	2	B	MO	C	C	M05-1075/4;E-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F027A	G	12	2	A	MO	O	O,C	M05-1075/1;D-4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1E12-F027B	G	12	2	A	MO	O	O,C	M05-1075/2;D-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1E12-F028A	G	10	2	A	MO	C	O,C	M05-1075/1;F-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1E12-F028B	G	10	2	A	MO	C	O,C	M05-1075/2;F-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1E12-F030	R	1x1.5	2	A-P*		C	C	M05-1075/2;B-3	Leak Rate	18 Month	2011	
1E12-F031A	NC	14	2	C		C	O	M05-1075/1;B-8	Exercise	3 Month		
1E12-F031B	NC	14	2	C		C	O	M05-1075/2;B-1	Exercise	3 Month		
1E12-F031C	NC	14	2	C		C	O	M05-1075/3;D-1	Exercise	3 Month		
1E12-F036	R	4x6	2	A/C		C	O,C	M05-1075/4;E-5	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F037A	GL	10	2	A	MO	C	C	M05-1075/1;F-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1E12-F037B	GL	10	2	A	MO	C	C	M05-1075/1;F-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	

* Passive valve

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F040	GL	3	2	B	MO	C	C	M05-1075/2;E-1	Position Indication Stroke Time (Exercise)	2 Year 3 Month		
1E12-F041A	NC	12	1	A/C	AO	C	O,C	M05-1075/1;D-2	Exercise Partial Exercise Leak Rate Position Indication	Refueling Cold Shutdown 18 Month 2 Year	2014 2011,2034	Ref 1
1E12-F041B	NC	12	1	A/C	AO	C	O,C	M05-1075/2;D-7	Exercise Partial Exercise Leak Rate Position Indication	Refueling Cold Shutdown 18 Month 2 Year	2014 2011,2034	Ref 1
1E12-F041C	NC	12	1	A/C	AO	C	O,C	M05-1075/3;E-7	Exercise Partial Exercise Leak Rate Position Indication	Refueling Cold Shutdown 18 Month 2 Year	2014 2011,2034	Ref 1
1E12-F042A	G	12	1	A	MO	C	O,C	M05-1075/1;D-3	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E12-F042B	G	12	1	A	MO	C	O,C	M05-1075/2;D-6	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E12-F042C	G	12	1	A	MO	C	O,C	M05-1075/3;E-5	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E12-F046A	C	4	2	C		O	O	M05-1075/1;B-7	Exercise	3 Month		
1E12-F046B	C	4	2	C		O	O	M05-1075/2;B-2	Exercise	3 Month		
1E12-F046C	C	4	2	C		O	O	M05-1075/3;B-2	Exercise	3 Month		
1E12-F047A	G	14	2	B	MO	O	O	M05-1075/4;C-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F047B	G	14	2	B	MO	O	O	M05-1075/4;C-8	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F048A	GL	14	2	B	MO	O	O,C	M05-1075/1;C-8	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F048B	GL	14	2	B	MO	O	O,C	M05-1075/2;C-1	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F049	G	3	2	A	MO	C	C	M05-1075/2;E-1	Leak Rate Position Indication Stroke Time (Exercise)	18 Month 2 Year 3 Month	2011	
1E12-F050A	NC	10	2	A/C		C	O,C	M05-1075/1;D-5	Exercise (Open) Leak Rate (Alternate Exercise Closed) Exercise (Closed)	Cold Shutdown 18 Month Cold Shutdown	2011	Ref 3 Ref 7
1E12-F050B	NC	10	2	A/C		C	O,C	M05-1075/2;E-5	Exercise (Open) Leak Rate (Alternate Exercise Closed) Exercise (Closed)	Cold Shutdown 18 Month Cold Shutdown	2011	Ref 3 Ref 7
1E12-F051A	G	6	2	A	AO	C	C	M05-1075/4;F-2	Stroke Time (Exercise) Leak Rate	3 Month 18 Month	2011	
1E12-F051B	G	6	2	A	AO	C	C	M05-1075/4;F-6	Stroke Time (Exercise) Leak Rate	3 Month 18 Month	2011	
1E12-F052A	GL	8	2	B	MO	C	C	M05-1075/4;E-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F052B	GL	8	2	B	MO	C	C	M05-1075/4;E-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F053A	GL	10	2	A	MO	C	O,C	M05-1075/1;D-6	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 18 Month	2011,2034	Ref 1

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F053B	GL	10	2	A	MO	C	O,C	M05-1075/2;E-4	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 18 Month	2011,2034	Ref 1
1E12-F054A	C	4	2	C		C	O	M05-1075/4;D-3	Exercise	3 Month		
1E12-F054B	C	4	2	C		C	O	M05-1075/4;D-6	Exercise	3 Month		
1E12-F055A	R	8x12	2	A/C		C	O,C	M05-1075/4;C-2	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F055B	R	8x12	2	A/C		C	O,C	M05-1075/4;C-7	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F060A	G	0.75	2	B	SO	C	C	M05-1075/4;B-4	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E12-F060B	G	0.75	2	B	SO	C	C	M05-1075/4;B-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E12-F064A	G	4	2	A	MO	O	O,C	M05-1075/1;B-8	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E12-F064B	G	4	2	A	MO	O	O,C	M05-1075/2;B-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E12-F064C	G	4	2	A	MO	O	O,C	M05-1075/3;B-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E12-F065A	G	4	2	B	AO	C	C	M05-1075/4;D-3	Stroke Time (Exercise)	3 Month		
1E12-F065B	G	4	2	B	AO	C	C	M05-1075/4;D-6	Stroke Time (Exercise)	3 Month		
1E12-F068A	G	18	3	B	MO	C	O	M05-1052/1;C-1	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F068B	G	18	3	B	MO	C	O	M05-1052/2;C-1	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F075A	G	0.75	2	B	SO	C	C	M05-1075/4;B-4	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E12-F075B	G	0.75	2	B	SO	C	C	M05-1075/4;B-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E12-F084A	C	2.5	2	C		O	O	M05-1075/1;B-7	Exercise	3 Month		
1E12-F084B	C	2.5	2	C		O	O	M05-1075/2;B-2	Exercise	3 Month		
1E12-F084C	C	2.5	2	C		O	O	M05-1075/3;E-2	Exercise	3 Month		
1E12-F085A	GSC	2	2	C		O	O,C	M05-1075/1;B-8	Exercise (Open) Exercise (Closed)	3 Month Alt Refueling	2008	
1E12-F085B	GSC	2	2	C		O	O,C	M05-1075/2;B-1	Exercise (Open) Exercise (Closed)	3 Month Alt Refueling	2008	
1E12-F085C	GSC	2	2	C		O	O,C	M05-1075/3;E-1	Exercise (Open) Exercise (Closed)	3 Month Alt Refueling	2008	
1E12-F087A	G	6	2	A	MO	C	C	M05-1075/4;E-3	Stroke Time (Exercise) Leak Rate	3 Month 18 Month	2011	
1E12-F087B	G	6	2	A	MO	C	C	M05-1075/4;E-7	Stroke Time (Exercise) Leak Rate	3 Month 18 Month	2011	
1E12-F094	G	4	3	NON	MO	C	C	M05-1075/4;E-7	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F096	G	4	2	B	MO	C	C	M05-1075/4;E-7	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E12-F098	C	4	2	NON		C		M05-1075/4;D-7	Exercise	3 Month		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E12-F101	R	1x1.5	2	A/C		C	O,C	M05-1075/3;C-5	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E12-F105	G	20	2	A	MO	O	O,C	M05-1075/3;B-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E12-F475	C	1	2	A/C		C	O,C	M05-1075/1;B-2	Leak Rate (Exercise Closed) Exercise (Open)	Refueling Refueling	2011,18,34 2018	
1E21-F001	G	20	2	A	MO	O	O,C	M05-1073;B-4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E21-F003	NC	12	2	C		C	O	M05-1073;E-6	Exercise	3 Month		
1E21-F005	G	10	1	A	MO	C	O,C	M05-1073;E-4	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E21-F006	NC	10	1	A/C	AO	C	O,C	M05-1073;E-2	Exercise Partial Exercise Leak Rate Position Indication	Refueling Cold Shutdown 18 Month 2 Year	2014 2011,2034	Ref 1
1E21-F011	G	4	2	A	MO	O	O,C	M05-1073;D-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E21-F012	GL	10	2	A	MO	C	C	M05-1073;D-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1E21-F018	R	1.5x2	2	A/C		C	O,C	M05-1073;E-5	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E21-F031	R	1.5x1	2	A/C		C	O,C	M05-1073;C-8	Leak Rate Bench	18 Month 5 Year	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E21-F033	C	2.5	2	C		O	O	M05-1073;D-6	Exercise	3 Month		
1E21-F034	GSC	2	2	C		O	O,C	M05-1073;D-6	Exercise (Open) Exercise (Closed)	3 Month Alt Refueling	2008	
1E21-F303	NC	10	2	C		C	O	M05-1073;C-5	Exercise	3 Month		
1E22-F001	G	16	2	B	MO	O	C	M05-1074;A-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E22-F002	C	16	2	C		O	O	M05-1074;A-5	Exercise Exercise - Alt Method	3 Month 3 Month		
1E22-F004	G	10	1	A	MO	C	O,C	M05-1074;E-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E22-F005	NC	10	1	A/C	AO	C	O,C	M05-1074;E-8	Exercise Partial Exercise Leak Rate Position Indication	Refueling Cold Shutdown 18 Month 2 Year	2014 2011,2034	Ref 1
1E22-F006	GSC	2	2	C	M	O	O,C	M05-1074;D-4	Exercise (Open) Exercise (Closed)	3 Month Refueling	2008	
1E22-F007	C	2.5	2	C		O	O	M05-1074;D-4	Exercise	3 Month		
1E22-F010	GL	10	2	B	MO	C	C	M05-1074;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E22-F011	GL	10	2	B	MO	C	C	M05-1074;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E22-F012	G	4	2	A	MO	C	O,C	M05-1074;D-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E22-F014	R	1x0.75	2	A/C		C	O,C	M05-1074;C-5	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E22-F015	G	20	2	A	MO	C	O,C	M05-1074;B-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E22-F016	C	20	2	C		C	O	M05-1074;B-6	Exercise Exercise - Alt Method	3 Month 3 Month		
1E22-F023	GL	10	2	A	MO	C	C	M05-1074;D-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2074	
1E22-F024	NC	14	2	C		C	O	M05-1074;E-3	Exercise	3 Month		
1E22-F035	R	1x0.75	2	A/C		C	O,C	M05-1074;E-3	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E22-F039	R	1x0.75	2	A/C		C	O,C	M05-1074;C-6	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E22-F330	EFC	0.75	2	A/C		O	C	M10-9074/3	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 2
1E22-F332	EFC	0.75	2	A/C		O	C	M10-9074/3	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 4
1E31-F014	G	1	2	B	SO	O	C	M05-1041/4;E-8	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E31-F015	G	1	2	B	SO	O	C	M05-1041/4;E-7	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E31-F017	G	1	2	B	SO	O	C	M05-1041/4;C-7	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	

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						NORMAL	TEST					
1E31-F018	G	1	2	B	SO	O	C	M05-1041/4;C-8	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1E32-F001A	GL	1.5	1	A	MO	C	C	M05-1070;C-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E32-F001E	GL	1.5	1	A	MO	C	O,C	M05-1070;E-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E32-F001J	GL	1.5	1	A	MO	C	O,C	M05-1070;B-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E32-F001N	GL	1.5	1	A	MO	C	O,C	M05-1070;D-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E32-F002A	GL	1.5	2	B	MO	C	O,C	M05-1070;C-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F002E	GL	1.5	2	B	MO	C	O,C	M05-1070;E-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F002J	GL	1.5	2	B	MO	C	O,C	M05-1070;B-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F002N	GL	1.5	2	B	MO	C	O,C	M05-1070;D-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F003A	GL	1.5	2	B	MO	C	O,C	M05-1070;C-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F003E	GL	1.5	2	B	MO	C	O,C	M05-1070;E-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E32-F003J	GL	1.5	2	B	MO	C	O,C	M05-1070;A-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F003N	GL	1.5	2	B	MO	C	O,C	M05-1070;D-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F006	G	2.5	2	B	MO	C	O,C	M05-1070;C-4	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F007	G	2.5	2	B	MO	C	O,C	M05-1070;C-3	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F008	G	2.5	2	B	MO	C	O,C	M05-1070;A-4	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F009	G	2.5	2	B	MO	C	O,C	M05-1070;A-3	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1E32-F010	C	0.75	2	C		C	O,C	M05-1070;E-4	Exercise (Open) Exercise (Closed)	Cold Shutdown 3 Month		Ref 1
1E32-F011	C	0.75	2	C		C	O,C	M05-1070;B-2	Exercise (Open) Exercise (Closed)	Cold Shutdown 3 Month		Ref 1
1E32-F315A	C	0.75	2	C		C	O,C	M05-1070;A-4	Exercise (Open) Exercise (Closed)	Cold Shutdown 3 Month		Ref 1
1E32-F315B	C	0.75	2	C		C	O,C	M05-1070;A-4	Exercise (Open) Exercise (Closed)	Cold Shutdown 3 Month		Ref 1
1E32-F315C	C	0.75	2	C		C	O,C	M05-1070;A-4	Exercise (Open) Exercise (Closed)	Cold Shutdown 3 Month		Ref 1
1E32-F315D	C	0.75	2	C		C	O,C	M05-1070;A-4	Exercise (Open) Exercise (Closed)	Cold Shutdown 3 Month		Ref 1
1E51-C002E	G	4	2	B	MO	O	C	M05-1079/2;D-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E51-F004	CV	1	2	B	AO	O	C	M05-1079/1;B-1	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1E51-F005	CV	1	2	B	AO	C	C	M05-1079/1;B-2	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1E51-F010	G	6	2	B	MO	O	C	M05-1079/2;A-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E51-F011	C	6	2	C		C	O	M05-1079/2;A-4	Exercise	3 Month		
1E51-F013	G	6	1	A	MO	C	O,C	M05-1079/2;F-6	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 18 Month 2 Year	2011,2034	Ref 1
1E51-F018	R	2x3	2	C		C	O	M05-1079/2;C-5	Bench	5 Year		
1E51-F019	GL	2	2	A	MO	C	O,C	M05-1079/2;D-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E51-F021	C	2.5	2	C		C	O	M05-1079/2;D-5	Exercise	3 Month		
1E51-F022	GL	4	2	B	MO	C	C	M05-1079/2;E-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E51-F025	CV	1	2	B	AO	O	C	M05-1079/1;D-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1E51-F026	CV	1	2	B	AO	O	C	M05-1079/1;D-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1E51-F030	C	6	2	C		C	O	M05-1079/2;B-4	Exercise	3 Month		
1E51-F031	G	6	2	A	MO	C	O,C	M05-1079/2;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E51-F040	C	12	2	A/C		C	O,C	M05-1079/1;C-4	Exercise (Open) Leak Rate (Alternate Exercise Closed) Exercise (Closed)	3 Month 18 Month 3 Month	2011,2034	
1E51-F045	GL	4	2	B	MO	C	O,C	M05-1079/1;D-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E51-F046	GL	2	2	B	MO	C	O	M05-1079/2;C-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E51-F059	G	4	2	B	MO	C	C	M05-1079/2;E-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E51-F061	C	2.5	2	C		O	O	M05-1079/2;B-4	Exercise	3 Month		
1E51-F062	C	2	2	C		O	O	M05-1079/2;B-4	Exercise	3 Month		
1E51-F063	G	8	1	A	MO	O	C	M05-1079/1;E-8	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1E51-F064	G	8	1	A	MO	O	C	M05-1079/1;E-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1E51-F065	NC	4	1	C		C	O	M05-1079/2;E-6	Exercise	Cold Shutdown		Ref 1
1E51-F066	NC	4	1	A/C	AO	C	O,C	M05-1079/2;F-8	Exercise (Open) Leak Rate (Exercise Closed)	Cold Shutdown 18 Month	2011,2034	Ref 4
1E51-F068	G	12	2	A	MO	O	C	M05-1079/1;C-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 2 Year	2011,2034	
1E51-F076	GL	1	1	A	MO	C	C	M05-1079/1;E-8	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1E51-F077	GL	1.5	2	A	MO	O	C	M05-1079/1;C-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Mon	2011,2034	
1E51-F078	G	3	2	A	MO	O	C	M05-1079/1;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1E51-F079	VR	2	2	C		C	O	M05-1079/1;C-6	Exercise	3 Month		
1E51-F081	VR	2	2	C		C	O	M05-1079/1;C-6	Exercise	3 Month		
1E51-F090	R	0.75x1	2	A/C		C	O,C	M05-1079/2;E-5	Leak Rate Bench	18 Month 5 Year	2011,2034	
1E51-F095	G	1	2	B	MO	C	O,C	M05-1079/1;D-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1E51-F377A	EFC	.75	2	A/C		O	C	M10-9079/2	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 2
1E51-F377B	EFC	0.75	2	A/C		O	C	M10-9079/2	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 4
1FC004A	CV	8	3	B	AO	O	O	M05-1037/3;E-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year		
1FC004B	CV	8	3	B	AO	O	O	M05-1037/3;A-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year		
1FC007	G	10	2	A	MO	O	C	M05-1037/1;B-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FC008	G	10	2	A	MO	O	C	M05-1037/1;B-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1FC011A	B	14	3	B	MO	O	O,C	M05-1037/3;E-7	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC011B	B	14	3	B	MO	O	O,C	M05-1037/3;A-7	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC013A	NC	14	3	C		O	O,C	M05-1037/3;E-7	Exercise Open Exercise Close	3 Month 3 Month		
1FC013B	NC	14	3	C		O	O,C	M05-1037/3;A-7	Exercise Open Exercise Close	3 Month 3 Month		
1FC015A	B	14	3	B	MO	O	O	M05-1037/3;E-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC015B	B	14	3	B	MO	O	O	M05-1037/3;A-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC016A	B	8	3	B	MO	O	C	M05-1037/3;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC016B	B	8	3	B	MO	O	C	M05-1037/3;C-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC017	B	8	3	B	AO	O	C	M05-1037/3;C-6	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year		
1FC023	B	8	3	B	AO	O	C	M05-1037/3;C-3	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1FC024A	B	8	3	B	MO	O	C	M05-1037/3;E-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC024B	B	8	3	B	MO	O	C	M05-1037/3;C-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC026A	B	14	3	B	MO	O	O,C	M05-1037/3;E-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1FC026B	B	14	3	B	MO	O	O,C	M05-1037/3;B-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FC036	G	8	2	A	MO	O	C	M05-1037/1;E-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FC037	G	8	2	A	MO	O	C	M05-1037/1;E-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FC091	R	4x6	3	C		C	O	M05-1037/3;E-1	Bench	5 Year		
1FP050	G	6	2	A	MO	O	C	M05-1039/9;D-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FP051	G	10	2	A	MO	O	C	M05 1039/9;C-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FP052	G	10	2	A	MO	O	C	M05-1039/9;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FP053	G	10	2	A	MO	O	C	M05-1039/9;C-4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FP054	G	10	2	A	MO	O	C	M05-1039/9;C-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1FP078	G	4	2	B	MO	O	C	M05-1039/9;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1FP079	G	4	2	B	MO	O	C	M05-1039/9;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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						NORMAL	TEST					
1FP092	G	6	2	A	MO	O	C	M05-1039/9;D-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1G33-F001	G	6	1	A	MO	O	C	M05-1076/4;B-8	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 7
1G33-F004	G	6	1	A	MO	O	C	M05-1076/4;B-5	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 7
1G33-F028	G	4	2	A	MO	C	C	M05-1076/4;E-8	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1G33-F034	G	4	2	A	MO	C	C	M05-1076/4;E-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011	
1G33-F039	G	4	2	A	MO	O	C	M05-1076/4;D-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 7
1G33-F040	G	4	2	A	MO	O	C	M05-1076/4;D-8	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 7
1G33-F051	NC	4	2	C		O	C	M05-1076/4;D-6	Exercise	Alt Refueling	2008	
1G33-F052A	NC	4	2	C		O	C	M05-1076/4;D-5	Exercise	Alt Refueling	2008	
1G33-F052B	NC	4	2	C		O	C	M05-1076/4;D-5	Exercise	Alt Refueling	2008	
1G33-F053	G	4	2	A	MO	O	C	M05-1076/4;C-8	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 7

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						NORMAL	TEST					
1G33-F054	G	4	2	A	MO	O	C	M05-1076/4;C-7	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 7
1HG001	B	2	2	A	MO	C	O,C	M05-1063;D-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1HG004	B	2	2	A	MO	C	O,C	M05-1063;C-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1HG005	B	2	2	A	MO	C	O,C	M05-1063;E-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1HG008	B	2	2	A	MO	C	O,C	M05-1063;E-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1HG009A	G	6	2	B	MO	C	O,C	M05-1063;E-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1HG009	G	6	2	B	MO	C	O,C	M05-1063;E-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1HG010A	VR	10	2	C		C	O,C	M05-1063;C-4	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1HG010B	VR	10	2	C		C	O,C	M05-1063;C-7	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1HG010C	VR	10	2	C		C	O,C	M05-1063;B-4	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3

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						NORMAL	TEST					
1HG010D	VR	10	2	C		C	O,C	M05-1063;B-7	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1HG011A	VR	10	2	C		C	O,C	M05-1063;C-4	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1HG011B	VR	10	2	C		C	O,C	M05-1063;C-6	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1HG011C	VR	10	2	C		C	O,C	M05-1063;B-4	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1HG011D	VR	10	2	C		C	O,C	M05-1063;B-6	Exercise (Actuator) Position Indication Exercise (Set Point)	3 Month 2 Year Cold Shutdown		Ref 3
1IA005	CV	3	2	A	AO	O	C	M05-1040/5;D-2	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1IA006	CV	3	2	A	AO	O	C	M05-1040/5;D-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 1
1IA007	CV	3	2	B	AO	O	C	M05-1040/5;D-3	Stroke Time (Exercise, Loss of Power) Position Indication	Cold Shutdown 2 Year		
1IA008	CV	3	2	B	AO	O	C	M05-1040/5;D-3	Stroke Time (Exercise, Loss of Power) Position Indication	Cold Shutdown 2 Year		Ref 1
1IA012A	GL	1	2	A	MO	O	O,C	M05-1040/7;D-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1IA012B	GL	1	2	A	MO	O	C	M05-1040/7;C-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1IA013A	GL	1	2	A	MO	O	O,C	M05-1040/7;D-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1IA013B	GL	1	2	A	MO	O	C	M05-1040/7;C-6	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1IA042A	C	1	2	A/C		O	C,O	M05-1040/7;D-6	Exercise Leak Rate	Cold Shutdown 2 Year	2011,2034	Ref 1
1IA042B	C	1	2	A/C		O	C,O	M05-1040/7;D-4	Exercise Leak Rate	Cold Shutdown 2 Year	2011,2034	Ref 1
1IA128A	R	1.5x3	D	C		C	O	M05-1040/7;E-7	Bench	5 Year		
1IA128B	R	1.5x3	D	C		C	O	M05-1040/7;E-2	Bench	5 Year		
1IA175	C	0.5	2	A/C		O	C	M05-1040/5;E-3	Leak Rate (Exercise)	2 Year	2011,22,34	
1PS004	G	0.75	2	A	SO	C	C	M05-1045/12;E-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS005	G	0.75	2	A	SO	C	C	M05-1045/12;E-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS009	G	0.75	2	A	SO	C	C	M05-1045/12;E-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS010	G	0.75	2	A	SO	C	C	M05-1045/12;E-5	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1PS016	G	0.5	2	A	SO	C	C	M05-1045/12;E-5	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS017	G	0.5	2	A	SO	C	C	M05-1045/12;E-5	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS022	G	0.5	2	A	SO	C	C	M05-1045/12;E-4	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS023	G	0.5	2	A	SO	C	C	M05-1045/12;E-4	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS031	G	0.75	2	A	SO	C	C	M05-1045/12;E-2	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS032	G	0.75	2	A	SO	C	C	M05-1045/12;E-2	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS034	G	0.75	2	A	SO	C	C	M05-1045/12;F-1	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS035	G	0.75	2	A	SO	C	C	M05-1045/12;E-1	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS037	G	0.75	2	A	SO	C	C	M05-1045/12;E-8	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS038	G	0.75	2	A	SO	C	C	M05-1045/12;E-8	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1PS043A	G	0.75	2	B	SO	C	C	M05-1045/12;F-2	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1PS043B	G	0.75	2	B	SO	C	C	M05-1045/12;F-3	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1PS044A	G	0.75	2	B	SO	C	C	M05-1045/12;E-2	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1PS044B	G	0.75	2	B	SO	C	C	M05-1045/12;E-3	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2013	
1PS047	G	0.75	2	A	SO	C	C	M05-1045/12;F-7	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS048	G	0.75	2	A	SO	C	C	M05-1045/12;E-7	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS055	G	0.5	2	A	SO	C	C	M05-1045/12;C-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS056	G	0.5	2	A	SO	C	C	M05-1045/12;C-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS069	G	0.5	2	A	SO	C	C	M05-1045/12;B-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1PS070	G	0.5	2	A	SO	C	C	M05-1045/12;B-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	
1R [illegible]5A	R	1x1.5	3	C		C	O	M05-1065/8;C-7	Bench	5 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1RA016B	R	1x1.5	3	C		C	O	M05-1065/8;C-3	Bench	5 Year		
1RE019	CV	3	2	B	AO	O	C	M05-1046/4;A-7	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1RE020	CV	3	2	B	AO	O	C	M05-1046/3;A-4	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1RE021	CV	3	2	A	AO	O	C	M05-1046/3;B-5	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2032 2011,2034	
1RE022	CV	3	2	A	AO	O	C	M05-1046/3;B-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2032 2011,2034	
1RF019	CV	3	2	B	AO	O	C	M05-1047/3;B-2	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1RF020	CV	3	2	B	AO	O	C	M05-1047/3;B-3	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1RF021	CV	3	2	A	AO	O	C	M05-1047/3;B-6	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	Month Year 18 Month	2032 2011,2034	
1RF022	CV	3	2	A	AO	O	C	M05-1047/3;B-7	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2032 2011,2034	
1SA029	CV	3	2	A	AO	O	C	M05-1048/6;D-2	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month Year Month	2011,2034	
1SA030	CV	3	2	A	AO	O	C	M05-1048/6;D-3	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	Month Year 18 Month	2032 2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SA031	CV	3	2	B	AO	O	C	M05-1048/6;D-4	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year	2032	
1SA032	CV	3	2	B	AO	O	C	M05-1048/6;D-5	Stroke Time (Exercise, Loss of Power) Position Indication	3 Month 2 Year		
1SF001	G	10	2	A	MO	C	C	M05-1060;E-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1SF002	G	10	2	A	MO	C	C	M05-1060;E-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1SF004	G	12	2	A	MO	C	C	M05-1060;C-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 18 Month 18 Month	2011,2034	
1SM001A	B	24	2	B	MO	C	O	M05-1069;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SM001B	B	24	2	B	MO	C	O	M05-1069;D-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SM002A	B	24	2	B	MO	C	O	M05-1069;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SM002B	B	24	2	B	MO	C	O	M05-1069;D-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SM003A	R	0.75x1	2	C		C	O	M05-1069;D-5	Bench	5 Year		
1SM003B	R	0.75x1	2	C		C	O	M05-1069;D-4	Bench	5 Year		
1SM008	EFC	0.75	2	A/C		O	C	M05-1069;A-3	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 4

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SM009	EFC	0.75	2	A/C		O	C	M05-1069;C-3	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 2
1SM010	EFC	0.75	2	A/C		O	C	M05-1069;C-3	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 2
1SM011	EFC	0.75	2	A/C		O	C	M05-1069;B-4	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 4
1SX001A	NC	30	3	C		C	O	M05-1052/1;D-7	Exercise	3 Month		
1SX001B	NC	30	3	C		C	O	M05-1052/2;D-7	Exercise	3 Month		
1SX001C	NC	10	3	C		C	O	M05-1052/3;D-7	Exercise	3 Month		
1SX003A	B	30	3	B	MO	O	O	M05-1052/1;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX003B	B	30	3	B	MO	O	O	M05-1052/2;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX003C	B	10	3	B	MO	O	O	M05-1052/3;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX004A	B	30	3	B	MO	O	O	M05-1052/1;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX004B	B	30	3	B	MO	O	O	M05-1052/2;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX004C	B	10	3	B	MO	O	O	M05-1052/3;D-5	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX006C	B	8	3	B	MO	C	O	M05-1052/3;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SX008A	B	20	3	B	MO	C	O	M05-1052/1;E-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX008B	B	20	3	B	MO	C	O	M05-1052/2;E-6	Stroke Time (Exercise, Position Indication	3 Month 2 Year		
1SX008C	B	8	3	B	MO	C	O	M05-1052/3;D-6	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX010A	CV	2	3	B	AO	C	O	M05-1052/1;E-3	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX010B	CV	2	3	B	AO	C	O	M05-1052/2;E-3	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX010C	CV	1.5	3	B	AO	C	O	M05-1052/3;E-4	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX011A	B	16	3	B	MO	C	C	M05-1052/1;D-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX011B	B	16	3	B	MO	C	C	M05-1052/2;E-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX012A	B	14	3	B	MO	C	O	M05-1052/1;C-3	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1SX012B	B	14	3	B	MO	C	O	M05-1052/2;C-3	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1SX014A	B	20	3	B	MO	O	C	M05-1052/1;F-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX014B	B	20	3	B	MO	O	C	M05-1052/2;F-3	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX014C	B	8	3	B	MO	O	C	M05-1052/3;E-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX016A	G	2.5	3	B	MO	C	O,C	M05-1052/1;C-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2004	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SX016B	G	2.5	3	B	MO	C	O,C	M05-1052/2;D-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2004	
1SX020A	B	12	3	B	MO	O	C	M05-1052/1;C-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX020B	B	12	3	B	MO	O	C	M05-1052/2;C-4	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX023A	CV	2	3	B	AO	C	O	M05-1052/1;C-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX023B	CV	2	3	B	AO	C	O	M05-1052/2;C-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX027A	CV	2	3	B	AO	C	O	M05-1052/4;D-6	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX027B	CV	2.5	3	B	AO	C	O	M05-1052/4;D-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX027C	CV	2.5	3	B	AO	C	O	M05-1052/4;C-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX029A	CV	1.5	3	B	AO	C	O	M05-1052/4;D-6	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX029B	CV	1.5	3	B	AO	C	O	M05-1052/4;D-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX029C	CV	1.5	3	B	AO	C	O	M05-1052/4;B-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX033	CV	2	3	B	AO	C	O	M05-1052/4;C-6	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX037	CV	1.5	3	B	AO	C	O	M05-1052/4;B-6	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX041A	CV	2	3	B	AO	C	O	M05-1052/3;C-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX041B	CV	2	3	B	AO	C	O	M05-1052/3;B-2	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX062A	B	14	3	B	MO	C	O	M05-1052/1;B-4	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1
1SX062B	B	14	3	B	MO	C	O	M05-1052/2;B-4	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year		Ref 1

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SX063A	B	8	3	B	MO	C	O	M05-1052/1;C-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX063B	B	8	3	B	MO	C	O	M05-1052/2;C-2	Stroke Time (Exercise) Position Indicstion	3 Month 2 Year		
1SX071A	G	3	3	B	MO	C	C	M05-1052/5;F-7	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX071B	G	3	3	B	MO	C	C	M05-1052/5;F-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX073A	G	3	3	B	MO	C	O,C	M05-1052/5;F-6	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX073B	G	3	3	B	MO	C	O,C	M05-1052/5;F-2	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX074A	G	3	3	B	MO	C	C	M05-1052/5;E-7	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX074B	G	3	3	B	MO	C	C	M05-1052/5;E-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX076A	G	3	3	B	MO	C	O,C	M05-1052/5;D-7	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX076B	G	3	3	B	MO	C	O,C	M05-1052/5;D-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX082A	G	3	3	B	MO	O	C	M05-1052/1;D-1	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX082B	G	3	3	B	MO	O	C	M05-1052/2;D-1	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX088A	G	3	2	A	MO	O	C	M05-1052/5;C-8	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SX088B	G	3	2	A	MO	O	C	M05-1052/5;C-4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX089A	G	3	2	A	MO	O	C	M05-1052/5;C-7	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX089B	G	3	2	A	MO	O	C	M05-1052/5;C-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX096A	G	3	2	A	MO	O	C	M05-1052/5;C-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX096B	G	3	2	A	MO	O	C	M05-1052/5;C-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX097A	G	3	2	A	MO	O	C	M05-1052/5;C-5	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX097B	G	3	2	A	MO	O	C	M05-1052/5;C-1	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 2 Year	2011,2034	
1SX105A	G	3	3	B	MO	C	C	M05-1052/5;D-7	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX105B	G	3	3	B	MO	C	C	M05-1052/5;D-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX107A	G	3	3	B	MO	C	O,C	M05-1052/5;u-7	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1SX107B	G	3	3	B	MO	C	O,C	M05-1052/5;D-3	Stroke Time (Exercise) Position Indication	Refueling 2 Year	2009	
1SX149	R	0.75x1	3	C		C	O	M05-1052/4;C-5	Bench	5 Year		
1SX150	R	0.75x1	3	C		C	O	M05-1052/4;B-6	Bench	5 Year		
1SX151A	R	0.75x1	3	C		C	O	M05-1052/4;E-5	Bench	5 Year		
1SX151B	R	0.75x1	3	C		C	O	M05-1052/4;E-2	Bench	5 Year		
1SX151C	R	0.75x1	3	C		C	O	M05-1052/4;C-2	Bench	5 Year		
1SX152A	R	0.75x1	3	C		C	O	M05-1052/1;C-3	Bench	5 Year		
1SX152B	R	0.75x1	3	C		C	O	M05-1052/2;C-2	Bench	5 Year		
1SX153A	R	0.75x1	3	C		C	O	M05-1052/1;B-6	Bench	5 Year		
1SX153B	R	0.75x1	3	C		C	O	M05-1052/2;B-6	Bench	5 Year		
1SX154A	R	0.75x1	3	C		C	O	M05-1052/4;E-5	Bench	5 Year		
1SX154B	R	0.75x1	3	C		C	O	M05-1052/4;E-2	Bench	5 Year		
1SX154C	R	0.75x1	3	C		C	O	M05-1052/3;C-2	Bench	5 Year		
1SX155A	R	0.75x1	3	C		C	O	M05-1052/1;E-4	Bench	5 Year		
1SX155B	R	0.75x1	3	C		C	O	M05-1052/2;F-3	Bench	5 Year		
1SX155C	R	0.75x1	3	C		C	O	M05-1052/3;D-4	Bench	5 Year		
1SX156A	R	0.75x1	3	C		C	O	M05-1052/3;C-2	Bench	5 Year		
1SX156B	R	0.75x1	3	C		C	O	M05-1052/3;B-2	Bench	5 Year		

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						NORMAL	TEST					
1SX157A	R	0.75x1	3	C		C	O	M05-1052/5;C-6	Bench	5 Year		
1SX157B	R	0.75x1	3	C		C	O	M05-1052/5;C-2	Bench	5 Year		
1SX169A	R	0.75x1	3	C		C	O	M05-1052/1;C-3	Bench	5 Year		
1SX169B	R	0.75x1	3	C		C	O	M05-1052/2;C-3	Bench	5 Year		
1SX169C	R	0.75x1	3	C		C	O	M05-1052/3;D-2	Bench	5 Year		
1SX170A	R	0.75x1	3	C		C	O	M05-1052/1;B-3	Bench	5 Year		
1SX170B	R	0.75x1	3	C		C	O	M05-1052/2;B-3	Bench	5 Year		
1SX173A	G	10	3	B	MO	C	O,C	M05-1052/1;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX173B	G	10	3	B	MO	C	O,C	M05-1052/2;D-2	Stroke Time (Exercise) Position Indication	3 Month 2 Year		
1SX181A	CV	2.5	3	B	AO	C	O	M05-1052/1;F-1	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX181B	CV	2.5	3	B	AO	C	O	M05-1052/2;F-1	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX185A	CV	2.5	3	B	AO	C	O	M05-1052/1;E-1	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX185B	CV	2.5	3	B	AO	C	O	M05-1052/2;E-1	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX189	CV	2.5	3	B	AO	C	O	M05-1052/2;B-4	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX193A	CV	1.5	3	B	AO	C	O	M05-1052/1;B-7	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX193B	CV	1.5	3	B	AO	C	O	M05-1052/2;B-4	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX197	CV	2	3	B	AO	C	O	M05-1052/1;B-4	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX200A	R	0.75x1	3	C		C	O	M05-1052/1;F-1	Bench	5 Year		

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						NORMAL	TEST					
1SX200B	R	0.75x1	3	C		C	O	M05-1052/2;F-1	Bench	5 Year		
1SX201A	R	0.75x1	3	C		C	O	M05-1052/1;E-1	Bench	5 Year		
1SX201B	R	0.75x1	3	C		C	O	M05-1052/2;E-1	Bench	5 Year		
1SX202A	R	0.75x1	3	C		C	O	M05-1052/2;A-7	Bench	5 Year		
1SX202B	R	0.75x1	3	C		C	O	M05-1052/2;C-4	Bench	5 Year		
1SX203	R	0.75x1	3	C		C	O	M05-1052/2;B-4	Bench	5 Year		
1SX204	R	0.75x1	3	C		C	O	M05-1052/1;B-5	Bench	5 Year		
1SX207	R	0.75x1	3	C		C	O	M05-1052/2;B-2	Bench	5 Year		
1SX208A	R	4x6	3	C		C	O	M05-1052/1;D-1	Bench	5 Year		
1SX208B	R	4x6	3	C		C	O	M05-1052/2;D-1	Bench	5 Year		
1SX209	CV	1.5	3	B	AO	C	O	M05-1052/2;A-1	Stroke Time (Exercise, Loss of Power)	3 Month	2032	
1SX294	R	0.75x1	3	C		C	O	M05-1052/1;D-7	Bench	5 Year		
1VG056B	EFC	0.75	2	A/C		O	C	M10-9105/4	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 2
1VG057B	EFC	0.75	2	A/C		O	C	M10-9105/10	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	2011	Ref 2
1VP004A	G	10	2	A	MO	O	C	M05-1109/2;D-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP004B	G	10	2	A	MO	O	C	M10-9105/4	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1VP005A	G	10	2	A	MO	O	C	M10-9105/10	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP005B	G	10	2	A	MO	O	C	M05-1109/3;D-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP014A	G	10	2	A	MO	O	C	M05-1109/2;E-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP014B	G	10	2	A	MO	O	C	M05-1109/3;E-3	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP015A	G	10	2	A	MO	O	C	M05-1109/2;E-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP015B	G	10	2	A	MO	O	C	M05-1109/3;E-2	Stroke Time (Exercise) Leak Rate Position Indication	3 Month 2 Year 18 Month	2011,2034	
1VP023A	R	0.75x	2	A/C		C	O,C	M05-1109/2;D-3	Leak Rate Bench	2 Year 5 Year	2011,2034	
1VP023B	R	0.75x	2	A/C		C	O,C	M05-1109/3;D-3	Leak Rate Bench	2 Year 5 Year	2011,2034	
1VP027A	R	0.75x1	2	A/C		C	O,C	M05-1109/2;F-3	Leak Rate Bench	2 Year 5 Year	2011,2034	
1VP027B	R	0.75x1	2	A/C		C	O,C	M05-1109/3;F-3	Leak Rate Bench	2 Year 5 Year	2011,2034	
1VQ001A	B	24	2	B-P	AO	C	C	M05-1110/2;C-8	Position Indication	2 Year		

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1VQ001B	B	24	2	B-P	AO	C	C	M05-1110/2;C-7	Position Indication	2 Year		
1VQ002	B	24	2	B		C	C	M05-1110/2;C-6	Position Indication Stroke Time (Exercise, Loss of Power)	2 Year 3 Month		
1VQ003	B	36	2	B	AO	C	C	M05-1110/2;C-5	Position Indication Stroke Time (Exercise, Loss of Power)	2 Year 3 Month	2032	
1VQ004A	B	36	2	A	AO	C	C	M05-1110/2;D-4	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2032 2011,2034	Ref 6
1VQ004B	B	36	2	A	AO	C	C	M05-1110/2;D-5	Position Indication Leak Rate Stroke Time (Exercise, Loss of Power)	18 Month 2 Year Cold Shutdown	2011,2034 2032	Ref 6
1VQ005	B	10	2	B	AO	C	C	M05-1110/2;D-6	Position Indication Stroke Time (Exercise, Loss of Power)	2 Year 3 Month	2032	
1VQ006A	GL	4	2	A	MO	C	C	M05-1110/2;C-4	Position Indication Leak Rate Stroke Time (Exercise)	18 Month 2 Year Cold Shutdown	2011	Ref 5
1VQ006B	GL	4	2	A	MO	C	C	M05-1110/2;C-4	Leak Rate Position Indication Stroke Time (Exercise)	2 Year 18 Month Cold Shutdown	2011,2034	Ref 5
1VR001A	B	36	2	A	AO	C	C	M05-1111/1;E-2	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2032 2011,2034	Ref 6
1VR001B	B	36	2	A	AO	C	C	M05-1111/1;E-1	Position Indication Stroke Time (Exercise, Loss of Power) Leak Rate	18 Month Cold Shutdown 2 Year	2032 2011,2034	Ref 6
1VR002A	GL	4	2	A	MO	C	C	M05-1111/1;E-2	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	2011,2034	Ref 5

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1VR002B	GL	4	2	A	MO	C	C	M05-1111/1;E-1	Leak Rate Position Indication Stroke Time (Exercise)	2 Year 18 Month Cold Shutdown	2011,2034	 Ref 5
1VR006A	B	12	2	A	AO	O	C	M05-1111/5;E-3	Leak Rate Position Indication Stroke Time (Exercise, Loss of Power)	2 Year 18 Month 3 Month	2011,2034 2032	
1VR006B	B	12	2	A	AO	O	C	M05-1111/5;E-2	Stroke Time (Exercise, Loss of Power) Position Indication Leak Rate	3 Month 18 Month 2 Year	2032 2011,2034	
1VR007A	B	12	2	A	AO	O	C	M05-1111/5;B-7	Position Indication Leak Rate Stroke Time (Exercise, Loss of Power)	18 Month 2 Year 3 Month	 2011,2034 2032	
1VR007B	B	12	2	A	AO	O	C	M05-1111/5;B-7	Position Indication Stroke Time (Exercise, Loss of Power) Leak Rate	18 Month 3 Month 2 Year	 2032 2011,2034	
1VR016A	EFC	0.75	2	A/C		O	C	M10-9111/5	Exercise Position Indication Leak Rate	Cold Shutdown 2 Year 2 Year	 2011	Ref 2
1VR016B	EFC	0.75	2	A/C		O	C	M10-9111/5	Leak Rate Position Indication Exercise	2 Year 2 Year Cold Shutdown	2011	 Ref 2
1VR018A	EFC	0.75	2	A/C		O	C	M10-9111/5	Leak Rate Exercise Position Indication	2 Year Cold Shutdown 2 Year	2011	 Ref 2
1VR018B	EFC	0.75	2	A/C		O	C	M10-9111/5	Leak Rate Exercise Position Indication	2 Year Cold Shutdown 2 Year	2011	 Ref 2
1VR035	2WAY	0.75	2	A	SO	O	C	M10-9111/19	Leak Rate Position Indication Stroke Time (Exercise, Loss of Power)	2 Year 18 Month 3 Month	2011,2034 2013	

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1VR036	2WAY	0.75	2	A	SO	O	C	M10-9111/19	Position Indication Leak Rate Stroke Time (Exercise, Loss of Power)	18 Month 2 Year 3 Month	 2011,2034 2013	
1VR040	2WAY	0.75	2	A	SO	O	C	M10-9111/19	Leak Rate Position Indication Stroke Time (Exercise, Loss of Power)	2 Year 18 Month 3 Month	2011,2034 2013	
1VR041	2WAY	0.75	2	A	SO	O	C	M10-9111/19	Stroke Time (Exercise, Loss of Power) Position Indication Leak Rate	3 Month 18 Month 2 Year	2013 2011,2034	
1WO001A	G	6	2	A	MO	O	C	M05-1117/19;E-5	Stroke Time (Exercise) Leak Rate Position Indication	Cold Shutdown 2 Year 18 Month	 2011,2034 	Ref 1
1WO001B	G	6	2	A	MO	O	C	M05-1117/19;E-6	Stroke Time (Exercise) Position Indication Leak Rate	Cold Shutdown 18 Month 2 Year	 2011,2034	Ref 1
1WO002A	G	6	2	A	MO	C	C	M05-1117/19;F-5	Position Indication Leak Rate Stroke Time (Exercise)	18 Month 2 Year Cold Shutdown	 2011,2034 	 Ref 1
1WO002B	G	6	2	A	MO	O	C	M05-1117/19;F-6	Leak Rate Stroke Time (Exercise) Position Indication	2 Year Cold Shutdown 18 Month	2011,2034 	 Ref 1
1WO551A	G	4	2	B	MO	O	C	M05-1117/26;E-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year	 	Ref 1
1WO551B	G	4	2	B	MO	O	C	M05-1117/26;E-7	Stroke Time (Exercise) Position Indication	Cold Shutdown 2 Year	 	Ref 1
1WO552A	G	4	2	B	MO	O	C	M05-1117/26;D-7	Position Indication Stroke Time (Exercise)	2 Year Cold Shutdown	 	 Ref 1

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EQUIPMENT NUMBER	TYPE	SIZE	CLASS	CATE-GORY	ACTU-ATOR	POSITION		P&ID/SHEET; coordinates	REQUIRED TESTS (Additional Tests Satisfied)	FREQUENCY	RELIEF REQUEST	COLD SHUTDOWN JUSTIFICATION
						NORMAL	TEST					
1WO552B	G	4	2	B	MO	O	C	M05-1117/26;D-7	Position Indication Stroke Time (Exercise)	2 Year Cold Shutdown		Ref 1
1WO570A	R	0.75x1	2	C		C	O	M05-1117/26;E-7	Bench	5 Year		
1WO570B	R	0.75x1	2	C		C	O	M05-1117/26;D-7	Bench	5 Year		
1WX019	P	2	2	A	AO	O	C	M05-1089/2;F-6	Position Indication Leak Rate Stroke Time (Exercise, Loss of Power)	18 Month 2 Year 3 Month	 2011,2034 2013	
1WX020	P	2	2	A	NO	O	C	M05-1089/2;F-5	Stroke Time (Exercise, Loss of Power) Leak Rate Position Indication	3 Month 2 Year 18 Month	2013 2011,2034	