JUN 1 2 2017

L-2017-113
10 CFR 50.4
10 CFR 50.55a

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Re: St. Lucie Unit 1
Docket No. 50-335
Inservice Inspection Plan
Fourth Ten-Year Interval Unit 1 Relief Request No. 16, Revision 0

Pursuant to the provisions of 10 CFR 50.55a(z)(2), Florida Power & Light (FPL) requests approval to perform the examination of select Class 1 piping and valves at plant conditions other than those required by the ASME Code. Relief is requested on the basis that hardship and unusual difficulty exists in establishing a system configuration that will subject all Class 1 components to RCS pressure during the system pressure test without a compensating increase in the level of quality and safety. The details and justification for this request are provided in the attachment to this letter.

Please contact Ken Frehafer at (772) 467-7748 if there are any questions about this submittal.

Sincerely,

Michael J Snyder
Licensing Manager
St. Lucie Plant

Attachment
MJS/KWF

cc: USNRC Regional Administrator, Region II
USNRC Senior Resident Inspector, St. Lucie Units 1 and 2

St. Lucie Unit 1
FOURTH INSPECTION INTERVAL
RELIEF REQUEST NUMBER RR#16, REVISION 0

Relief Request
In Accordance with 10 CFR50.55a(z)(2)

-- Hardship or Unusual Difficulty Without Compensating Increase in Level of Quality or Safety--

1. ASME Code Component(s) Affected

Class 1, Category B-P, Item Number B15.10, Pressure Retaining components.

2. Applicable Code Edition and Addenda

The Code of record for St. Lucie Unit 1 is the 2001 Edition through 2003 Addenda of the ASME Boiler and Pressure Vessel Code, Section XI (Reference 1), “Rules for Inservice Inspection of Nuclear Power Plant Components” as modified by 10CFR50.55a.

3. Applicable Code Requirement

Exam Cat.	Item No.	Examination Requirements
B-P	B15.10	System leakage test (IWB-5220) Note 2;”The system leakage test (IWB-5220) shall be conducted prior to plant startup following a reactor refueling outage. IWB-5222(b) “The pressure retaining boundary during the system leakage test conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary.”

ASME Section XI, Table IWB-2500-1, "Examination Categories," Examination Category B-P, Item B15.10 requires that a system leakage test be conducted prior to startup following each refueling outage in accordance with the requirements of IWB-5220.

Paragraph IWB-5222(a) requires that the pressure retaining boundary during the system leakage test shall correspond to the reactor coolant boundary, with all valves in the position required for normal reactor operation startup with the visual examination extended to include the second closed valve at the boundary extremity. Paragraph IWB-5222(b) requires the pressure retaining boundary during the system leakage test conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary.

ASME Code Case N-798, "Alternative Pressure Testing Requirements for Class 1 Piping Between the First and Second Vent, Drain, and Test Isolation Devices," (Reference 2) states that for portions of Class 1 vent, drain and test piping between the first and second isolation devices that normally remain closed during plant operation, only the boundaries of IWB-5222(a) shall apply.

ASME Code Case N-800, "Alternative Pressure Testing Requirements for Class 1 Piping Between the First and Second Injection Valves," (Reference 3) states that for portions of the Class 1 boundary between the first and second isolation valves in the injection and return path of standby safety systems, the system leakage test may be conducted by pressurization of the Class 1 volume using the Class 2 safety system to pressurize the volume. It further states that such alternative tests shall be performed each inspection interval and the system leakage test shall be conducted using the pressure associated with the Class 2 system function that provides the highest pressure between the Class 1 isolation valves.

4. Reason for Request

Pursuant to the provisions of 10 CFR 50.55a(z)(2), FPL requests approval to perform the examination of select Class 1 piping and valves at plant conditions other than those required by the ASME Code. Relief is requested in accordance with 10 CFR 50.55a(z)(2) on the basis that hardship and unusual difficulty exists in establishing a system configuration that will subject all Class 1 components to RCS pressure during the system pressure test without a compensating increase in the level of quality and safety. Extending the pressure retaining boundary during system pressure test to all Class 1 pressure retaining components within the system boundary will require a number of temporary system alterations, temporary piping installations, and control logic alterations. FPL requests approval to perform the examination of selected Class 1 piping and valves at plant conditions other than those required by IWB-5222(b) by using the alternative boundaries permitted by Code Cases N-798 and N-800 at the end of the interval.

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Table 1 identifies the Class 1 pressure retaining components associated with the requested relief that will remain in their normal operating configuration and will not be pressurized during the system leakage test.

The Class 1 vents and drains in the Reactor Coolant System are equipped with inboard isolation valves and outboard blind flanges which provide double isolation of the Reactor Coolant Pressure Boundary (RCPB). The valves are maintained in the closed position during normal plant operation, and the downstream pipe and blind flange are not normally pressurized. To perform the ASME Code required pressure test, it would be necessary to manually open the inboard valves to pressurize the piping and connections. Pressurization by this method defeats the double isolation and reduces the margin of personnel safety for those performing the test. Furthermore, performing the test with the inboard isolation valves open requires several man-hours to position the valves for the test and restore the valves to their closed positions once the test is completed. These valves are located in close proximity to the RCS loop piping and thus would require personnel entry into high radiation areas within the containment and a consequent increase in radiation exposure. Since this test would be performed near the end of an outage when all RCS work has been completed, the time required to open and close these valves would impact the outage schedule. In addition, the segments pressurized for the test would have to be de-pressurized at the next refueling outage when the RCS is de-pressurized in order to relieve the test pressure in the section, adding another action to performing the test. Thus, compliance with this specific Code requirement results in unnecessary hardship pursuant to 10 CFR 50.55a(z)(2) without a compensating increase in the level of quality and safety.

Table 2 identifies the Class 1 pressure retaining components associated with the requested relief that will remain in their normal operating configuration and will not be pressurized to RCS system pressure during the system leakage test, but will be examined at full operating pressures commensurate with their respective safety functions to the Class 2 boundary.

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Design of some St. Lucie Class 1 process piping requires substantial effort to extend the boundary subject to RCS pressure where check valves or non-redundant components serve as the first system isolation from the reactor coolant system. Such configurations may require temporary piping installations, such as hard-pipe jumpers, and/or other unusual temporary system configurations in order to achieve test pressures at upstream piping and valves. Since the Class 1 system pressure testing is performed in Mode 3, these temporary configurations could conflict with Technical Specification requirements. Establishing and restoring such temporary configurations could also result in an unwarranted increase in worker radiation exposure.

Based on the above, extension of the boundary subjected to RCS pressure during system leakage tests to include all Class 1 pressure retaining components within the system boundary represents a hardship and unusual difficulty that does not provide a compensating increase in the level of quality and safety provided by the examination.

The following is specific information pertaining to the various pipe segments identified in Table 1 and Table 2 for which relief has been requested.

Small Bore Class 1 RCS Vent and Drain Lines

Relief is requested from pressurizing piping between the first and second isolation device on small size vent and drain lines. There are ten (10) Class 1 vent or drain lines in the Reactor Coolant System (RCS) identified in Table 1, ranging in size from 3/4 inch to two (2) inches. Eight (8) of these consist of an inboard isolation valve and a blind flange in series. Two (2) 3/4 inch segments consist of two valves in series. The piping segments provide the design-required double isolation barrier for the reactor coolant pressure boundary. The Code-required leakage test would be performed in MODE 3 at the normal operating pressure of 2250 psia and at a nominal temperature of 532°F. Leakage testing of these piping segments at nominal operating pressure in MODE 3 would require the opening of the inboard isolation valve at the normal operating RCS temperature and pressure conditions. In so doing, the design requirement for two primary coolant pressure boundary isolation devices would be violated. Additionally, opening these valves introduces the potential risk for spills and personnel contamination, and there is no way to depressurize the eight (8) blind flanges at the completion of the examination.

Small Bore Class 1 Safety Injection/Shutdown Cooling Fill, Vent and Drain Lines

There are twenty eight (28) vent and drain lines in the Class 1 portion of the Safety Injection system, size 3/4 inch or 1 inch. In addition, there are four (4) 1 inch SIT fill lines, four (4) 3/4 inch pressure transmitter root lines, and four (4) 2 inch HPSI header lines within the Class 1 portion of the Safety Injection system directly connected to the RCS, isolated by the 12 inch loop check valves. These lines are all statically pressurized during normal operation and are monitored for leakage by SIT pressure and SIT level indications. These lines are visually examined both during the RCS system leakage test as Class 1 boundary lines, and during the High Pressure Safety Injection System functional pressure test conducted at HPSI Pump discharge pressure in accordance with the requirement of IWA-5212(e) to examine systems at their highest operating pressure. These components are identified on Table 2.

Larger Bore Class 1 Safety Injection and Shutdown Cooling Piping Segments

Hot Leg Shutdown Cooling Suction

There are two (2) 10 Inch Hot Leg Shutdown Cooling Suction lines, one from each Hot Leg, identified on Table 2. These piping segments consist of short segments of piping between the two Shutdown Cooling Suction valves on each train of the system. These valves are interlocked at a required set point below 350 psig, and administratively controlled to be closed at a pressure not to exceed 275 psia to avoid over-pressurization of the Shutdown Cooling System. The interlock prevents manual opening of the valves from the Control Room with RCS pressure above the set point. The piping segment is VT-2 inspected through the entire length as part of the Class 1 system inspection at the conclusion of each refueling outage, as well as when the Shutdown Cooling System is placed in service, in accordance with IWA-5212(e). The proposed system pressure test will not specifically pressurize past the first isolation valve for this inspection. It is possible that the piping becomes pressurized due to minor leakage past the first isolation valve. No external or visible leakage will be allowed for the test to be acceptable. This test will provide assurance that the combined first and second isolation valves are effective in maintaining the reactor coolant pressure boundary at normal operating temperature and pressure.

HPSI/LPSI Loop Header and SIT discharge piping.

These large bore piping segments, identified on Table 2, provide the flow path for Safety Injection Tank discharge into the RCS, High Pressure and Low Pressure Safety Injection, and Shutdown Cooling Return to the RCS. The primary isolation devices are the 12 inch loop check valves oriented to flow into the RCS. The piping segments provide the design-required double isolation barrier for the reactor coolant pressure boundary. These lines are all statically pressurized during normal operation and are monitored for leakage by SIT pressure and SIT level indications. These lines are visually examined both during the RCS system leakage test as Class 1 boundary lines, and during the High Pressure Safety Injection System functional pressure test conducted at HPSI Pump discharge pressure in accordance with the requirement of IWA-5212(e) to examine systems at their highest operating pressure.

Leakage testing at RCS pressure would require a pressure source be connected at each segment location by way of temporary piping connections and/or unusual temporary system configurations which would challenge both the header check valves in the auxiliary building and the loop check closure at the RCS connection. In so doing, the design requirement for two primary coolant pressure boundary isolation devices would be violated. For test locations located overhead and away from normal personnel access areas, ladders or scaffolding would have to be installed to provide access to the piping segment and to open the valve. This process would lead to the occupational dose associated with leakage testing these lines.

These lines are located in areas involving occupational radiation exposure, and leakage testing of these lines would increase occupational radiation dose. Restoration of temporary configurations to normal operating conditions would be hazardous to personnel, lead to excess occupational dose, and unnecessarily extend the outage without a commensurate increase in the quality and safety of the system.

Dose estimates were performed with input from the site health physics ALARA coordinator. The estimates were prepared by identifying tasks, personnel resources, and times based on existing site processes and then utilizing survey maps to quantify the estimated dose. The subject < 2” nominal piping is located in high radiation areas of the plant. Performing these tests involves cycling open normally closed valves and then restoring to normal configuration. Pressure trapped between the primary isolation valve and blind flange during each test must be discharged upon completion of tests. Maintenance support would be necessary to remove blind flange and reinstall with new gaskets at each location. Dose estimates for opening, (normally closed) small bore valves located on < 2”

nominal piping and performing additional tests and then restoring the system following the tests is approximately 3.985 person-rem.
Dose estimates for performing additional testing for Class 1 Safety Injection piping is approximately 0.846 person-rem. These tests involve connecting an external pump at four locations and pressurizing these segments to 2250 psia. Such pressurization may over-pressure the adjoining system. This activity represents a significant personnel safety hazard. This piping can be tested concurrently with ASME Section XI pressure tests of Class 2 and 3 piping performed at the highest pressure the system is exposed to during normal operating conditions.

Piping equal to and greater than 2 inch diameter is applicable to the Risk Informed program implemented at St Lucie. There have been no failures identified on the stated piping under the Risk Informed Program.

The bolted connections of Class 1 are walked down each refueling outage on piping associated with this relief for evidence of leakage.

A review was performed for site and external OE pertaining to the subject piping using the site ISI repair & replacement records and the fleet condition reporting system.

Plant Specific OE

As shown below, St Lucie Units 1 and 2 have not experienced any issues with stress corrosion cracking or fatigue in socket or butt welds in piping associated with Tables 1 and 2.

Table 1, RCS Vent and Drain Piping (Ref Code Case N-798)

St Lucie Units 1 and 2 have not experienced any issues with stress corrosion cracking or fatigue in socket or butt welds in piping associated with Table 1. Facilities contacted for operating experience indicated they had not experienced any significant issues from similar piping configurations. These piping configurations are relatively short segments of piping. The highest stress levels associated with these piping configurations are located on the upstream side of the valves on the pressurized portion of the piping system. The failure of welded connections located on the downstream (non-pressurized) side of these valves is highly unlikely. This piping would be leak tested as stated in Code Case N-798.

Table 2, A/B Hot Leg Shutdown Cooling Suction & A/B Hot Leg injection (Ref Code Case N-800)

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St Lucie Units 1 and 2 have not experienced any issues with stress corrosion cracking or fatigue in socket or butt welds in piping associated with Table 2.

Facilities contacted for operating experience indicated they had not experienced any significant issues from similar piping configurations. This piping would be leak tested as stated in Code Case N-800.

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Table 1
Affected Class 1 Pressure Retaining Components
Examination Category B-P (ASME Code Case N-798)

Affected Line/Component	Pipe Diameter (in.)	Diameter Schedule	Approximate length (ft.)	Number of Welded Connections	Drawing No.	Boundary Exceptions
Loop 1A1 Drain	2	SCH 160 304 SS	< 1 ft.	2	8770-G-078 Sht. 110B	Valve V1235 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
Loop 1A2 Drain	2	SCH 160 304 SS	< 1 ft.	2	8770-G-078 Sht. 110B	Valve V1234 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
Loop 1B1 Drain	2	SCH 160 304 SS	< 1 ft.	2	8770-G-078 Sht. 110B	Valve V1233 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
Loop 1B2 Drain	2	SCH 160 304 SS	0.5 ft.	2	8770-G-078 Sht. 110B	Valve V1232 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
A Hot Leg Drain	1	SCH 160 304SS	0.5 ft.	2	8770-G-078 Sht. 110B	Valve V1215 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
B Hot Leg Drain	1	SCH 160 304 SS	0.5 ft.	2	8770-G-078 Sht. 110B	Valve V1247 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
A Hot Leg Refueling Level Indicator	3/4	SCH 160 304 SS	1.5 ft.	2	8770-G-078 Sht. 110B	Valve V1214 remains closed to avoid pressurizing downstream Class 1 pipe to valve V01505.
RCGVS Bypass	3/4	SCH 160 304 SS	1 ft.	7	8770-G-078 Sht. 110A	Valve V1455 remains closed to avoid pressurizing downstream Class 1 pipe to valve V1454.
Vent on Pressurizer Level Loop 1110Y	3/4	SCH 160 304 SS	0.5 ft.	2	8770-G-078 Sht. 110A	Valve V1439 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.
Vent on Pressurizer Level Loop 1110X	3/4	SCH 160 304 SS	0.5 ft.	2	8770-G-078 Sht. 110A	Valve V1440 remains closed to avoid pressurizing downstream Class 1 pipe to blind flange.

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Table 2
Affected Class 1 Pressure Retaining Components
Examination Category B-P (ASME Code Case N-800)

Affected Line/Component	Pipe Diameter (in.)	Diameter Schedule	Approximate length (ft.)	Number of Welded Connections	Drawing No.	Boundary Exceptions
SAFETY INJECTION LOOP 1A1					8770-G-078 Sheet 131A & 131B	Loop check valve V3227 remains closed isolating SI from RCS pressure.
SI-148 SIT Outlet to RCS	12	SCH 160 304 SS	60 ft.	11	*SI-N-10	Class 1 pipe, V3624 to V3227
SI-112 HPSI/LPSI Header	6	SCH 160 304 SS	215 ft. IC 110 ft. OC	49	*SI-N-10 *SI-N-6	Class 1 pipe, V3124 to SI-148
SI-139 HPSI Header SI-116	3 3/4	SCH 160 304 SS	6 ft. <1 ft.	5 2	*SI-N-6 **SI-53	Class 1 pipe, SI-143 to SI-112
SI-143 HPSI Header	2	SCH 160 304 SS	1 ft.	2	**SI-131	Class 1 pipe, V3123 to SI-139
SI-123 SIT Fill/Check Valve Leakage	1	SCH 160 304 SS	67 ft.	21 9	**SI-13 **SI-78	Class 1 pipe, SI-148 to HCV-3628
SI-122 PT3329	3/4	SCH 160 304 SS	<5 ft.	2	**SI-115	Class 1 pipe to SO-03-9
Vents and Drains SI-232 SI-233 SI-234 SI-235 SI-236 SI-519	1	SCH 160 304 SS	<1 ft. ea.	4 2 4 2 4 5	**SI-112 **SI-114 **SI-113 **SI-123 **SI-121 **SI-111	Class 1 pipe vent/drain valves
SI-247 SI-248	3/4	SCH 160 304 SS	<1 ft. ea.	Included in SI-123	**SI-13	Class 1 pipe vent/drain valves

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Table 2
Affected Class 1 Pressure Retaining Components
Examination Category B-P (ASME Code Case N-800)

Affected Line/Component	Pipe Diameter (in.)	Diameter Schedule	Approximate length (ft.)	Number of Welded Connections	Drawing No.	Boundary Exceptions
SAFETY INJECTION LOOP 1A2					8770-G-078 Sheet 131A & 131B	Loop check valve V3217 remains closed isolating SI from RCS pressure.
SI-149 SIT Outlet to RCS	12	SCH 160 304 SS	55 ft.	12	*SI-N-10	Class 1 pipe, V3614 to V3217
SI-113 HPSI/LPSI Header	6	SCH 160 304 SS	125 ft. IC 105 ft. OC	42	*SI-N-10 *SI-N-6	Class 1 pipe, V3114 to SI-149
SI-140 HPSI Header SI-117	3 3/4	SCH 160 304 SS	6 ft. < 1 ft.	5 2	*SI-N-6 **SI-52	Class 1 pipe, SI-126 to SI-113
SI-126 HPSI Header	2	SCH 160 304 SS	1 ft.	2	**SI-130	Class 1 pipe, V3113 to SI-140
SI-125 SIT Fill/Check Valve Leakage	1	SCH 160 304 SS	78 ft.	27 13	**SI-12 **SI-80	Class 1 pipe, SI-149 to HCV-3618
SI-124 PT3319	3/4	SCH 160 304 SS	<5 ft.	2	**SI-117	Class 1 pipe to SO-03-10
Vents and Drains SI-227 SI-228 SI-229 SI-230 SI-231	1	SCH 160 304 SS	<1 ft. ea.	4 4 2 2 4	**SI-108 **SI-109 **SI-110 **SI-122 **SI-120	Class 1 pipe vent/drain valves
SI-249 SI-250	3/4	SCH 160 304 SS	<1 ft. ea.	Included in SI-125	**SI-12	Class 1 pipe vent/drain valves

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Table 2
Affected Class 1 Pressure Retaining Components
Examination Category B-P (ASME Code Case N-800)

Affected Line/Component	Pipe Diameter (in.)	Diameter Schedule	Approximate length (ft.)	Number of Welded Connections	Drawing No.	Boundary Exceptions
SAFETY INJECTION LOOP 1B1					8770-G-078 Sheet 131A & 131B	Loop check valve V3237 remains closed isolating SI from RCS pressure.
SI-150 SIT Outlet to RCS	12	SCH 160 304 SS	40 ft.	13	*SI-N-12	Class 1 pipe, V3634 to V3237
SI-111 HPSI/LPSI Header	6	SCH 160 304 SS	40 ft. IC 160 ft. OC	28	*SI-N-12 *SI-N-5	Class 1 pipe, V3134 to SI-150
SI-138 HPSI Header SI-115	3 3/4	SCH 160 304 SS	6 ft. < 1 ft.	5 2	*SI-N-5 **SI-54	Class 1 pipe, SI-145 to SI-111
SI-145 HPSI Header	2	SCH 160 304 SS	1 ft.	2	**SI-128	Class 1 pipe, V3133 to SI-138
SI-120 SIT Fill/Check Valve Leakage	1	SCH 160 304 SS	58 ft.	5 16	**SI-14 **SI-73	Class 1 pipe, SI-150 to HCV-3638
SI-121 PT3339	3/4	SCH 160 304 SS	<0.5 ft.	2	**SI-119	Class 1 pipe to SO-03-11
Vents and Drains SI-237 SI-238 SI-239 SI-240	1	SCH 160 304 SS	<1 ft. ea.	8 2 2 4	**SI-101 **SI-102 **SI-125 **SI-127	Class 1 pipe vent/drain valves
SI-253 SI-254	3/4	SCH 160 304 SS	<1 ft. ea.	Included in SI-120	**SI-73	Class 1 pipe vent/drain valves

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Table 2 Affected Class 1 Pressure Retaining Components Examination Category B-P (ASME Code Case N-800)						
Affected Line/Component	**Pipe Diameter (in.)**	**Diameter Schedule**	**Approximate length (ft.)**	**Number of Welded Connections**	**Drawing No.**	**Boundary Exceptions**
SAFETY INJECTION LOOP 1B2					8770-G-078 Sheet 131A & 131B	Loop check valve V3247 remains closed isolating SI from RCS pressure.
SI-151 SIT Outlet to RCS	12	SCH 160 304 SS	57 ft.	13	*SI-N-12	Class 1 pipe, V3634 to V3237
SI-110 HPSI/LPSI Header	6	SCH 160 304 SS	80 ft. IC 150 ft. OC	43	*SI-N-13 *SI-N-5	Class 1 pipe, V3134 to SI-150
SI-137 HPSI Header SI-114	3 3/4	SCH 160 304 SS	6 ft. < 1 ft.	5 2	*SI-N-5 **SI-55	Class 1 pipe, SI-145 to SI-111
SI-147 HPSI Header	2	SCH 160 304 SS	1 ft.	2	**SI-129	Class 1 pipe, V3133 to SI-138
SI-118 SIT Fill/Check Valve Leakage	1	SCH 160 304 SS	63 ft.	9 19	**SI-11 **SI-83	Class 1 pipe, SI-150 to HCV-3638
SI-119 PT3349	3/4	SCH 160 304 SS	<0.5 ft.	2	**SI-118	Class 1 pipe to SO-03-11
Vents and Drains SI-241 SI-242 SI-243 SI-244 SI-245 SI-246	1	SCH 160 304 SS	<1 ft. ea.	2 4 2 4 2 4	**SI-105 **SI-104 **SI-103 **SI-107 **SI-124 **SI-126	Class 1 pipe vent/drain valves
SI-251 SI-252	3/4	SCH 160 304 SS	<1 ft. ea.	Included in SI-118	**SI-83	Class 1 pipe vent/drain valves

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Table 2
Affected Class 1 Pressure Retaining Components
Examination Category B-P (ASME Code Case N-800)

Affected Line/Component	Pipe Diameter (in.)	Diameter Schedule	Approximate length (ft.)	Number of Welded Connections	Drawing No.	Boundary Exceptions
A Hot Leg Shutdown Cooling Suction					8770-G-078 Sheet 131A	Valve V3480 is interlocked closed @>350 psig.
SI-127	10	SCH 160 304 SS	4 ft.	2	*SI-N-12	Class 1 pipe, V3634 to V3237
SI-152	2	SCH 160 304 SS	<0.5 ft.	6	*SI-N-13 *SI-N-5	Class 1 pipe, V3134 to SI-150
SI-201	1	SCH 160 304 SS	<1 ft.	2	*SI-N-5	Class 1 pipe, SI-145 to SI-111
B Hot Leg Shutdown Cooling Suction					8770-G-078 Sheet 131A	Valve V3452 is interlocked closed @>350 psig.
SI-130	10	SCH 160 304 SS	18 ft.	5	*SI-N-13	Class 1 pipe to valve V3651
SI-153	2	SCH 160 304 SS	<0.5 ft.	2	**SI-99	Class 1 pipe to cap
SI-135	1	SCH 160 304 SS	<1 ft.	2	**SI-96	Class 1 pipe to relief valve V3469
SI-226	1	SCH 160 304 SS	<1 ft.	2	SI-106	Class 1 pipe to vent cap

*denotes Large Bore Isometric 8770-G-125 series drawing
**denotes Small Bore Isometric 8770-B-124 series drawing

5. Proposed Alternative and Basis for Use

Proposed Alternative

FPL will conduct the required end of interval system pressure tests as prescribed by Table IWB-2500-1, Examination Category B-P, boundary exceptions as noted in Tables 1 and 2. Those portions of the systems that are statically pressurized during normal operation will be visually examined both during the RCS system leakage test as Class 1 boundary lines, and during the High Pressure Safety Injection System functional pressure test conducted at HPSI Pump discharge pressure.

Basis for Use

The objective of the required visual examination at normal operating conditions is to detect evidence of leakage and thereby verify the integrity of the RCS pressure boundary. FPL believes the same evidence of leakage can be identified by visual examination of all portions of the Class 1 systems at their own normal operating pressures without subjecting the standby systems and secondary boundaries to unusual alignments and excess pressure. Therefore, FPL concludes that the proposed alternative provides reasonable assurance of system integrity and an acceptable level of quality and safety comparable to an exam performed at normal operating conditions.

6. Duration of Proposed Alternative

This relief request is applicable to the St. Lucie Unit 1 Fourth Inservice Inspection Interval which began February 11, 2008 and ends February 10, 2018. An interval extension is being utilized to complete the Fourth Inservice Inspection Interval as allowed by IWA-2430(c)(1). The Fifth Inservice Inspection Interval will start on February 10, 2018. Credit for these examinations will only be applied to the Fourth Inservice Inspection Interval.

7. Precedent

St. Lucie Plant, Unit No. 1 – Relief Request Number 29 – Examination of Select Class 1 Piping and Valves (TAC No. MD5145).

8. References

1. ASME Boiler and Pressure Vessel Code, Section XI, 2001 Edition through 2003 Addenda.

2. American Society of Mechanical Engineers Boiler and Pressure Vessel Code Case N-798, “Alternate Pressure Testing Requirements for Class 1 Piping Between the First and Second Vent, Drain and Test isolation Devices Section XI, Division 1.”

3. American Society of Mechanical Engineers Boiler and Pressure Vessel Code Case N-800, “Alternate Pressure Testing Requirements for Class 1 Piping Between the First and Second Injection Valves Section XI, Division 1.”