

INSERVICE TESTING PROGRAM
REVISION 12
SAN ONOFRE NUCLEAR GENERATING STATION
UNIT 2

October 1986

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IN - SERVICE TESTING PROGRAM
SAN ONOFRE - UNIT 2

Valve Relief Request No. 2
Proposed Revision

SYSTEM: Safety Injection

COMPONENT: Check Valves 24-001-C-724
24-002-C-724

CATEGORY: C

CLASS: 2

FUNCTION: These valves prevent backflow from High Pressure Safety Injection suction header, Low Pressure Safety Injection Header and Spray Pump Suction Header to Refueling Water Storage tanks.

TEST REQUIREMENT: Exercise the valves open and closed every three months.

BASIS FOR RELIEF: These valves cannot be full stroke exercised during power operation because the LPSI and HPSI pumps cannot overcome the reactor coolant system pressure. During cold shutdown these valves cannot be full stroke exercised because the LPSI pumps are aligned to take suction from the reactor coolant system bypassing the refueling water tank.

BASIS FOR REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

The valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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Valve Relief Request No. 3
Proposed Revision

SYSTEM: Safety Injection

COMPONENT: Check Valves 24-003-C-724
24-004-C-724

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to provide recirculation flow from the containment sump to the suction piping of the HPSI, LPSI and containment spray pumps.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: During normal plant operation there is no water in the containment sump, hence no water available to flow through these check valves. In addition, these valves may not be part stroke exercised without draining part of the emergency core cooling system piping. These lines must be filled and vented while in Modes 1, 2 or 3.

BASIS FOR REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

The valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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Valve Relief Request No.11
Proposed Revision

SYSTEM: Safety Injection

COMPONENT: Check Valves 12-040-A-551
12-041-A-551
12-042-A-551
12-043-A-551

CATEGORY: AC

CLASS: 1

FUNCTION: These valves open to allow a flow of water from the Safety Injection Tanks into the Safety Injection Header of each Primary loop.

TEST
REQUIREMENT: Exercise the valves every three months.

BASIS
FOR RELIEF: These check valves cannot be stroked during normal operation without violating the Technical Specification requirements for safety injection tank pressure and level bands. In addition, these valves cannot be full stroked except under actual loss of coolant accident conditions, i.e. no full flow path available.

BASIS FOR
REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

The valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other three valves will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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Valve Relief Request No.12
Proposed Revision

SYSTEM: Safety Injection

COMPONENT: Check Valves 16-077-C-645
16-084-C-645
16-199-C-645
16-201-C-645

CATEGORY: C

CLASS: 2

FUNCTION: These valves open to allow a flow of water from the refueling water tank into the suction piping of the Low Pressure Safety Injection (LPSI) pumps.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These check valves cannot be full stroke exercised during power operation because the LPSI pumps cannot overcome Reactor Cooling System (RCS) pressure. During cold shutdown and refueling the LPSI pumps are used for shutdown cooling system which bypasses these check valves by taking suction directly from the RCS.

BASIS FOR REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

These valves will be partial stroke exercised during periodic tests of the LPSI pumps during normal operation. Mini-flow tests will be conducted every three months. The valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other three valves will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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Valve Relief Request No.13
Proposed Revision

SYSTEM: Containment Spray

COMPONENT: Stop Check Valves 8-004-C-406
8-006-C-406

CATEGORY: AC

CLASS: 2

FUNCTION: These valves open to allow a flow of water from the containment spray pump discharge into the containment spray ring headers.

TEST
REQUIREMENT: Exercise the valves every three months.

BASIS
FOR RELIEF: These check valves cannot be tested in any plant mode without resulting in a spray down of the containment.

BASIS FOR
REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

The valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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Valve Relief Request No.18
Proposed Revision

SYSTEM: Main Steam

COMPONENT: Check Valves 4-003-D-620
4-005-D-620

CATEGORY: C

CLASS: 3

FUNCTION: These valves are in the main steam supply to the turbine - driven auxiliary feedwater pump. In the event of a main steam line break, these valves provide reverse flow check to isolate the affected steam generator.

TEST REQUIREMENT: Exercise the valves every three months.

BASIS FOR RELIEF: These valves cannot be reverse flow checked during normal operation as there is no positive means of verifying that the valve disc travels to the closed position. The noise level in the immediate area of the valves precludes the use of acoustic sensing devices. In addition, the plant design does not provide for a method of verifying that a pressure differential exists across the valve when it is in the closed position.

BASIS FOR REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

These valves will be full stroked open every three months. These valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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Valve Relief Request No.20
Proposed Revision

SYSTEM: Condensate and Feedwater

COMPONENT: Check Valves 20-036-C-609
20-129-C-609

CATEGORY: C

CLASS: 2

FUNCTION: These check valves are in the main feedwater supply to the steam generators. During a loss of feedwater accident, these check valves will close isolating the main feedwater piping from auxiliary feedwater flow.

TEST
REQUIREMENT: Exercise the valves every three months.

BASIS
FOR RELIEF: These valves cannot be reverse flow checked during power operation without isolating main feedwater flow to the steam generators. In addition, the plant design does not provide for a method of verifying that a pressure differential exists across the valve when it is in the closed position.

BASIS FOR
REVISION: Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radioactive liquid waste. Significant radiation exposure is received by personnel performing the tests and significant O&M expenses are incurred for each test. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ALTERNATE
TESTING:

These valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). However, if it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled, inspected and manually full stroked during the same outage. Photographs of the valve "as-found" internals will be taken at each inspection and retained as records, taking note of any abnormalities observed.

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