



Safety Related Equipment  
Downgrade Checklist (SREDC)  
Page 1 of 4

50-280/281

STD-CN-0003

POW 11

Station [ ] North Anna [X] Surry	Mark Numbers of Affected Components (Attach additional pages if necessary): <b>See list of affected Mark Numbers on page 4</b>
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Primary Document for Implementing the Downgrade (Check One):

EDSCR - **0000014327**

OTHER - If "OTHER" is checked, list the following information for the primary document (such as a DCP, Technical Specification Change Request or other document which requires a Safety Evaluation be performed) to be used for implementing the downgrade:

Document Number \_\_\_\_\_ Document Type \_\_\_\_\_

Document Title \_\_\_\_\_

*Equipment  
type  
change  
request*

**DIRECTIONS**

A Safety Related Equipment Downgrade Checklist (SREDC) is required to be completed for every EDSCR which involves a downgrade of safety related equipment. This applies to legitimate downgrades and not for corrections to obvious Q-List input errors, etc. The SREDC (1) supplements the Component QCAs performed for the components and (2) contains those questions which must be addressed in order to confirm whether the SR components can be legitimately downgraded.

When the primary document for implementing the downgrade is the EDSCR, then the questions shall be answered "yes" or "no" relevant to the component's current design basis functions. If all the questions are answered "no", then the downgrade(s) may proceed based on the EDSCR as supported by this checklist and the applicable QCA(s). If a "yes" answer is obtained to any of the questions, then a Safety Evaluation must be prepared and approved in accordance with VPAP-3001 prior to proceeding with the downgrade.

When the primary document for implementing the downgrade is something OTHER than an EDSCR (such as a DCP), then the questions shall be answered "yes" or "no" relevant to the component's design basis functions which will exist once the change is implemented. If all the questions are answered "no", then the downgrade(s) may proceed under the cognizance of the document implementing the change. If a "yes" answer is obtained to any of the questions, then a Safety Evaluation must be prepared and approved in accordance with VPAP-3001 prior to proceeding with the downgrade.

Prepared By (Print Name): <b>John D. Waddill</b>	Signature: (See Note 1 below.)	Date:
Reviewed By (Print Name): <b>Gary F. Naylor</b>	Signature: (See Note 1 below.)	Date:

Note 1 - Either the Preparer or the Reviewer of the Checklist shall be an authorized Safety Evaluation Preparer. QCRC Approved 3/15/2000

EDSCR No. 0000014327

*ADD*  
*10/11*  
*G. Edelman*  
July 97

Safety Related Equipment

Downgrade Checklist (SREDC)

Page 2 of 4

STD CN-0003

POW 11

SECTION A - GENERAL SAFETY RELATED CRITERIA		
1	Is any function (active or passive) of this component required to ensure the integrity of the reactor coolant pressure boundary is maintained within the normal reactor coolant makeup capability?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2	Is this component required to function or resist failure in order to shut down the reactor within accident analysis limits and maintain it in a safe shut down condition?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	Is this component required to function or resist failure in order to provide the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposures comparable to the guideline exposure of 10 CFR 100.11?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
SECTION B - SPECIFIC SAFETY RELATED		
1.	Is the component a system pressure boundary part of or a component which could cause a break of the reactor coolant pressure boundary in the form of pressure vessels, piping, pumps, valves, instruments or like components?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.	Is this component part of instrumentation systems beyond the normally open root valve and connected to the reactor coolant pressure boundary or other safety related fluid system wherein a failure of the component would result in the loss of fluid inventory beyond the safety related makeup capability of the system?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3	Has credit been taken for this component in the UFSAR Accident Analysis to actively respond or passively remain functional in a design basis accident or transient in order to meet the General Safety Related Criteria (Section A)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4.	Is this component required to maintain sufficient inventory or cooling for the spent fuel pool?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5.	Is this component required to provide heating, cooling, ventilating or air filtration in order to provide an acceptable environment for safety related equipment in order to remain within their design basis environmental qualification (normal, mild or harsh environments) and thereby remain functional during or following design basis accidents and transients as defined within the UFSAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6	Is this component required to provide air, heating, cooling, ventilation or filtration to areas containing safety related equipment that require the presence of personnel during or following a design basis accident or transient?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7.	Is this component required to control or limit environmental conditions (i.e., humidity, pressure, radiation, temperature) resulting from or normally present during a design basis accident or transient to ensure environmental qualifications of safety related equipment subject to 10 CFR 50.49 are not exceeded?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
8.	Is this component required to provide electrical power or the protection of electrical power necessary for safety related equipment to accomplish their safety related function?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
9.	Is this component required to ensure auxiliary services such as cooling water, compressed air, diesel fuel, lubricating oil, freon etc. are provided to safety related equipment in order for them to perform their safety related function?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10.	Is this component an instrument or part of an instrument loop that is required to initiate or control any safety related function? This includes instrumentation that provides information to operating personnel to take specific manually controlled actions for which the accident analyses have taken credit and for which no automatic controls are provided?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

EDSCR No. 0000014327

July 97

Safety Related Equipment  
Downgrade Checklist (SREDC)  
Page 3 of 4

STD-GN-0003

POW 11

11.	Is this component within a safety related system functional boundary however it specifically does not perform an active safety function but could potentially fail and prevent other safety related equipment from accomplishing their safety related function?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
12.	Is this component a support, support device, cabinet, rack, fastener, etc., which is required for a safety related component to perform its safety related function?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
13.	Is this component a structure, panel, cabinet, enclosure, vault or other equipment required for the protection of safety related equipment against design basis accidents and transients or to which safety related equipment is attached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
14.	Does this component provide the interface barrier (mechanical, electrical or structural) between a safety related and non-safety related system or component wherein it is the means by which the integrity and continued operation of the safety related system is ensured to be available during all design basis accidents and transients?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
15.	Is this component required to control hydrogen concentration in the primary containment atmosphere to acceptable limits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>SECTION C - PROGRAMMATIC SAFETY RELATED CRITERIA</b>		
1.	Is this component part of instrumentation loops required to Monitor Reg. Guide 1.97 Category I Type A, B, C, D or E variables that are required to provide information or controls to allow the control room operator to take pre-planned manual actions for which no automatic control is provided and that are required for safety systems to accomplish and maintain safe plant shutdown for design basis accidents and transients?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.	Is this component designated as a spare which could be used in a safety related application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>SECTION D - UNREVIEWED SAFETY QUESTION SCREENING</b>		
1.	Could any subsequent activities, which would be based on the downgraded classification, increase the probability of occurrence of an accident previously evaluated in the SAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2.	Could any subsequent activities, which would be based on the downgraded classification, increase the consequences of an accident previously evaluated in the SAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3.	Could any subsequent activities, which would be based on the downgraded classification, increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4.	Could any subsequent activities, which would be based on the downgraded classification, increase the consequences of a malfunction of equipment important to safety previously evaluated in the SAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5.	Could any subsequent activities, which would be based on the downgraded classification, create the possibility of an accident of a different type than previously evaluated in the SAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6.	Could any subsequent activities, which would be based on the downgraded classification, create the possibility of a different type of malfunction of equipment important to safety than any previously evaluated in the SAR?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
7.	Could any subsequent activities, which would be based on the downgraded classification, reduce the margin of safety as defined in the basis for any technical specification?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
8.	Does the SAR (UFSAR, Technical Specifications, Licensing Commitments, etc.) explicitly state that the component proposed for downgrade is "Safety Related?"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

July 97

EDSCR No. 0000014327

Safety Related Equipment  
Downgrade Checklist (SREDC)  
Page 4 of 4

STD-GN 0003

POW 11

**SECTION E - BASIS FOR THE DOWNGRADE**

Explain the basis for proceeding with the downgrade and include a discussion to document the reasoning behind the previous answers, citing references as appropriate to allow an independent reviewer to reach the same conclusion. References should include applicable sections of the UFSAR, Technical Specifications, drawings, inputs from other groups, licensing correspondence, NRC Safety Evaluation Reports, SDBDs, etc. Be sure that the comments clearly correlate with the applicable mark numbers and above responses provided for this SREDC. Attach additional pages if necessary in order to complete your comments. Indicate whether or not the proposed downgraded classification would create classification conflicts with other documents (UFSAR, drawing, SDBD, etc.); if yes document how the conflict will be resolved.

Mark Numbers: 38-01-SW-PP-30.00-WS-PIPE-17-10  
38-01-SW-PP-30.00-WS-PIPE-18-10  
38-01-SW-PP-30.00-WS-PIPE-19-10  
38-01-SW-PP-30.00-WS-PIPE-41-10  
38-01-SW-PP-42.00-WS-PIPE-20-10  
38-01-SW-PP-6.00-WS-PIPE-327-10 (\*)

References: Drawing 11448-FM-071A, Sheet 2  
Drawing 11448-FM-071A, Sheet 4

Basis: The noted portions of Service Water system piping are being downgraded from SR to NSQ-Seismic. The piping within the scope of this downgrade is downstream of the last isolation valve before the Service Water discharges to the Unit 1 Discharge Tunnel. The function of the pressure boundary of the piping upstream of the outlet valves is to provide isolation in the event of a loss of Intake Canal Inventory. AP 12.01, "Loss of Intake Canal Level" directs the operator to manually close the CCHX SW outlet isolation valves in the event that one of the SW motor operated valves (1-SW-MOV-102A/B) fails to close and isolate the SW flow path from the Intake Canal to the CCHXs to conserve SW inventory.

This downgrade is contingent on the downgrade of the Component Cooling System heat transfer function associated with the CCHXs to NSQ. When the CC downgrade is approved, the requirement to ensure SW flow to and from the CCHXs will no longer be considered to support a safety related function.

Technical Specification 3.14, "Circulating and Service Water Systems" requires this flow path, and thus, an NSQ-Seismic classification is adequate. Maintaining the downgraded piping seismic ensures the structural capability of the piping and the integrity of the SR/NSQ boundary at the CCHX SW outlet isolation valves. Analyzing the piping for seismically related stresses significantly reduces the probability of a failure in the piping. Leakage due to a postulated failure downstream of the boundary would be limited due to the short section of 30-inch piping extending above the floor. Since the floor restrains the downgraded portion of the piping, the ability to open a significant leak path in the piping is reduced. Therefore, flooding is not a concern.

July 97

EDSCR No. 0000014327

Two other lines connect to the 42-inch SW discharge header. 3"-WS-326-136 is the Unit 1 SW discharge flow path from the Main Control Room/Emergency Switchgear Room Chiller condensers. The line is safety related and connects to the 42-inch header via a 6-inch pipe in the concrete encasement (6"-WS-327-10\*). This line will remain safety related and the boundary will be the 3-inch to 6-inch connection. Line 6"-WS-327-10\* will be downgraded to NSQ (SEIS/5.2.26.A, SYPB 5.4). A postulated failure of the NSQ portion of the path would result in limited leakage due to the concrete encasement and the low pressure of the system at this point. The other line (16"-WS-1-10) is the miscellaneous drain collection known as the "Christmas tree." The upstream piping connected to this line is non-safety related.

Electronic EDSCR 14327 has been prepared to handle this downgrade. The piping NSQ functions and definitions are SYPB - 5.4, SEIS - 5.2.26.A.

\* NOTE: As part of the processing of EDSCR 14327, line number 6"-WS-1-10 was changed to 6"-WS-327-10 to agree with its designation in the 1980 vintage line designation table.



