



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION REPORT  
VIRGIL C. SUMMER NUCLEAR STATION  
DOCKET NUMBER 50-395  
RELIEF REQUEST - ASME CODE  
SECTION XI REQUIREMENTS

I. INTRODUCTION

The Virgil C. Summer Nuclear Station operating license was issued on August 6, 1982. Paragraph 10 CFR 50.55a(g)(4) requires that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, Class 2 and Class 3 shall meet the requirements set forth in the applicable Section XI Editions and Addenda of the ASME Boiler and Pressure Vessel Code to the extent practical within the limitations of design, geometry and materials of construction of the components.

In a letter dated August 1, 1984, the South Carolina Electric & Gas Company (the licensee) requested relief from the hydrostatic testing after modifications to ASME Code Class 2 piping. In lieu of the required hydrostatic tests, nondestructive examinations consisting of surface and visual examination of the welds were proposed.

II. EVALUATION OF RELIEF REQUEST

The licensee has requested written relief from an examination requirement that he has determined to be impractical in accordance with paragraph 10 CFR 50.55a(g)(5)(iii). We have evaluated the information in the referenced letter and have determined that the examination requirement, from which relief is requested, is impractical as discussed in the following paragraphs.

RELIEF REQUESTED

The licensee intends to cut a weld at a 2-inch half coupling in the main feedwater piping. This will provide access for the necessary visual inspection of the installed steam generator preheater baffle. Cutting and replacing the weld will be in accordance with the ASME code, Section XI, 1977 Edition through and including Summer 1978 Addenda. Relief from performing the required hydrostatic pressure test after welding the main feedwater piping is requested.

CODE REQUIREMENT

Subsequent to repairs or modifications by welding which penetrate the pressure boundary on piping greater than one inch diameter, conduct a hydrostatic test on piping where such repairs or modifications were performed.

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Pursuant to ASME Code, Section XI, 1977 Edition through and including Summer 1978 Addenda, hydrostatic test pressure is 1.25 Psv or 1470 PSI where Psv is the lowest pressure setting among the main steam safety valves.

#### BASES FOR REQUESTING RELIEF

Performing the required hydrostatic test on the Feedwater piping subsequent to the modification would be extremely difficult, impractical, and expensive due to the following:

1. The inability to maintain pressure due to potential leakage through the Feedwater Isolation Valves, Main Steam Isolation Valves, and other valves connected to the system.
2. Additional time and effort to pin or block main steam constant support and variable spring hangers.
3. Additional time and effort to remove the Main Steam Safety Valves and blank the inlet piping.
4. Potential for placing excess stress on the Steam Generator shells.
5. Potential for damage to system instrumentation, (or considerable time delay) due to additional time and effort expended to isolate or remove instrumentation.
6. Potential for damage to the Main Steam System and its hangers due to static loads caused by water solid condition.
7. Potential for damage to Steam Generator tube bundles.
8. Isolation and preparation of this system would result in additional radiation exposure to personnel.
9. In addition to the above eight (8) reasons, the alternate examinations specified will provide a level of confidence and quality equal to or better than the required testing per the ASME Code.

#### PROPOSED ALTERNATIVE EXAMINATIONS AND TESTS

Prior to declaring the Feedwater System operable, the following examinations will be performed to the affected Feedwater System piping welds -- except for Item 4, which will be completed at the end of the First Inservice Inspection Interval:

1. Magnetic Particle Examination on the root pass and final weld surface pursuant to ASME Code Section V, Article 7.

2. Visual Examination.
3. Perform Inservice Leak Test at nominal operating pressure.
4. Perform Hydrostatic Test at the end of the 10 Year Interval.

The alternate examinations will be performed in accordance with approved written procedures by qualified personnel after the baffle inspection and before the system is declared operable.

### III. CONCLUSIONS

We have determined that it is impractical to perform the Code required hydrostatic test on the two-inch feedwater piping weld because the feedwater system design does not allow isolation of the weld from the steam generator and the main steam piping system. To accomplish hydrostatic test requirements would entail removal or isolation of instrumentation from the systems to prevent damage by overpressurization, removal of the main steam safety valves and blanking the inlet piping, and pinning or blocking the main steam supports and spring hangers. We find the effort required to comply with the hydrostatic test pressure for the 2" welds does not provide a commensurate gain in safety of the plant. The alternative examinations and test proposed by the licensee are adequate in determining the structural integrity of the welds. We therefore conclude that relief from the hydrostatic test requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1977 Edition through Summer 1978 Addenda, may be granted pursuant to paragraph 10 CFR 50.55a(g)(6)(i) for the modification as requested.

We have concluded, based on the considerations discussed above, that: (1) certain specific requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1977 Edition through Summer 1978 Addenda are impractical and (2) such relief is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee if such relief were not granted.

Pursuant to 10 CFR 51.32, the Commission has determined that granting the relief will have no significant impact on the environment (49 FR ).

### IV. REFERENCES

South Carolina Electric & Gas Company letter dated August 1, 1984.  
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Dated: October 23, 1984