

licensed to write boiler and pressure vessel insurance in that Province;

(3) by an Inspector employed by other enforcement authorities in the United States or Canada having jurisdiction over the designated plant.

(b) The Authorized Inspection Agency, including its staff of Authorized Nuclear Inservice Inspector Supervisors and the Inspectors, shall meet the requirements of ASME N626.

(c) The Authorized Inspection Agency shall be accredited by ASME in accordance with the provisions set forth in ASME N626.

IWA-2130 ACCESS FOR INSPECTOR

The Owner shall arrange for an Inspector to have access to all parts of the plant as necessary to make the required inspections. The Owner shall keep the Inspector informed of the progress of the preparatory work necessary to permit inspections and shall notify the Inspector at a time reasonably in advance of when the components will be ready for inspection.

IWA-2200 EXAMINATION METHODS

(a) The three types of examinations used during inservice inspection are defined as visual, surface, and volumetric. The examination method to be used is specified in Tables IWB-, IWC-, IWD-, IWE-, IWF-, and IWL-2500-1. If a component must be examined in a high radiation area, remotely controlled equipment may be advisable.

(b) When preparation of a surface for nondestructive examination is required, the preparation shall be by a mechanical method. Such surfaces shall be blended into the surrounding area as may be required to perform the examination. The wall thickness shall not be reduced below the minimum thickness required by design. Non-mandatory Appendix D may be used for such surface preparation.

IWA-2210 VISUAL EXAMINATIONS

Visual examinations shall be conducted in accordance with Article 9 of Section V and the following. A written procedure and report of examination results is required. For procedure demonstration, a near-distance vision test chart containing text with lower case characters without an ascender or descender (e.g., a, c, e, o) meeting Table IWA-2210-1 is required. Measurements of the near-distance test chart shall be made

once before initial use with an optical comparator (10X or greater) or other suitable instrument to verify that the height of a representative lower case character, for the selected type size, meets the requirements of Table IWA-2210-1. Remote examination may be substituted for direct examination. The remote examination procedure shall be demonstrated to resolve the selected test chart characters. Alternatives to the direct visual examination distance requirements of Section V may be used as specified in Table IWA-2210-1. It is not necessary to measure illumination levels on each examination surface when the same portable light source or similar installed lighting equipment is demonstrated to provide the specified illumination at the maximum examination distance. The illumination levels from battery powered portable lights shall be checked before and after each examination or series of examinations, not to exceed 4 hours between checks.

IWA-2211 VT-1 Examination

VT-1 examinations are conducted to detect discontinuities and imperfections on the surfaces of components, including such conditions as cracks, wear, corrosion, or erosion.

IWA-2212 VT-2 Examination

(a) VT-2 examinations are conducted to detect evidence of leakage from pressure retaining components, with or without leakage collection systems, as required during the conduct of system pressure test.

(b) VT-2 examinations shall be conducted in accordance with IWA-5000. For direct examination, the Table IWA-2210-1 maximum examination distance shall apply to the distance from the eye to the surfaces being examined.

IWA-2213 VT-3 Examination

VT-3 examinations are conducted to determine the general mechanical and structural condition of components and their supports by verifying parameters such as clearances, settings, and physical displacements; and to detect discontinuities and imperfections, such as loss of integrity at bolted or welded connections, loose or missing parts, debris, corrosion, wear, or erosion. VT-3 includes examinations for conditions that could affect operability or functional adequacy of snubbers and constant load and spring type supports.

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defined by the system boundary (or each portion of the boundary) within which the components have the same minimum required classification and are designed to the same pressure rating as governed by the system function and the internal fluid operating conditions, respectively.

(b) Systems which share safety functions for different modes of plant operation, and within which the component classifications differ, shall be subject to separate system hydrostatic tests of each portion of the system boundary having the same minimum required design pressure ratings.

(c) Systems designed to operate at different pressures under several modes of plant operation or post-accident conditions shall be subject to a system hydrostatic test within the test boundary defined by the operating mode with the higher pressure.

(d) Where the respective system design pressure ratings on the suction and discharge sides of system pumps differ, the system hydrostatic test boundary shall be divided into two separate boundaries (such as suction side and discharge side test boundaries). In the case of positive displacement pumps, the boundary interface shall be considered as the pump. In the case of centrifugal pumps, the boundary interface shall be the first shutoff valve on the discharge side of the pump.

IWA-5240 VISUAL EXAMINATION

IWA-5241 Noninsulated Components

(a) The VT-2 visual examination shall be conducted by examining the accessible external exposed surfaces of pressure retaining components for evidence of leakage.

(b) For components whose external surfaces are inaccessible for direct VT-2 visual examination, only the examination of the surrounding area (including floor areas or equipment surfaces located underneath the components) for evidence of leakage shall be required.

IWA-5242 Insulated Components

(a) For systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure retaining bolted connections for VT-2 visual examination. For other components, a VT-2 visual examination may be conducted without the removal of insulation by examining the accessible and exposed surfaces and joints of the insulation. Essentially vertical surfaces of insulation need only be examined at the lowest elevation where leakage may be detectable. Es-

entially horizontal surfaces of insulation shall be examined at each insulation joint.

(b) When examining insulated components, the examination of the surrounding area (including floor areas or equipment surfaces located underneath the components) for evidence of leakage, or other areas to which such leakage may be channeled, shall be required.

(c) Discoloration or residue on surfaces examined shall be given particular attention to detect evidence of boric acid accumulations from borated reactor coolant leakage.

IWA-5243 Components With Leakage Collection Systems

Where leakages from components are normally expected and collected (such as valve stems, pump seals, or vessel flange gaskets) the VT-2 visual examination shall be conducted by verifying that the leakage collection system is operative.

IWA-5244 Buried Components

(a) In nonredundant systems where the buried components are isolable by means of valves, the VT-2 visual examination shall consist of a leakage test that determines the rate of pressure loss. Alternatively, the test may determine the change in flow between the ends of the buried components. The acceptable rate of pressure loss or flow shall be established by the Owner.

(b) In redundant systems where the buried components are nonisolable, the VT-2 visual examination shall consist of a test that determines the change in flow between the ends of the buried components. In cases where an annulus surrounds the buried components, the areas at each end of the buried components shall be visually examined for evidence of leakage in lieu of a flow test.

(c) In nonredundant systems where the buried components are nonisolable, such as return lines to the heat sink, the VT-2 visual examination shall consist only of a verification that the flow during operation is not impaired.

IWA-5245 Elevated Temperature Tests

The visual examination of system components requiring a test temperature above 200°F during the system pressure test may be conducted after the pressure holding period of IWA-5213 is satisfied, and the pressure is lowered to the level corresponding with a temperature of 200°F, in accordance with allowable cool-down rates established by fracture prevention criteria.