ARTICLE NH-7000
OVERPRESSURE PROTECTION

NH-7100 GENERAL REQUIREMENTS

Overpressure protection for Section III, Class 1 components, when the metal temperature exceeds the Applicability and Max. Temp. Limits listed in Section II, Part D, Subpart 1, Tables 2A and 2B, shall be in accordance with the rules of NB-7000, except as modified by Subsection NH.

NH-7110 SCOPE

(a) Subsection NH provides Class 1 overpressure protection rules for those pressure boundary structures which, having been designated by the Owner (NCA-1140 and NCA-3230) as a group of items requiring such protection, are not covered by NB-7000 rules because some of the structures are expecting service temperatures above those currently allowed under the rules of Subsection NB.

(b) Whereas the rules of NB-7000 are oriented toward water and steam cooled reactor systems, the rules of Subsection NH encompass a wider variety of coolant fluids.

(c) The rules of NB-7000 shall govern unless paragraphs are specifically altered by the rules of Subsection NH. All references to other NB-7000 paragraphs are to be interpreted as referring to the NB-7000 paragraphs as modified by Subsection NH.

(d) As with NB-7000, the rules of this Subsection require that all system conditions, including transients, are described in the Design Specifications for the components being protected.

(e) In the evaluation of the effects of overpressure events, structural loadings shall include, but not be limited to, the types of events listed below.

(1) system overpressure due to a closed valve, a blocking object, or a solid core of metal coolant
(2) overpressure due to the addition of heat to an isolated portion of the system
(3) overpressure due to nuclear transients
(4) overpressure due to failure of a system component, including the effects of leaks from adjacent systems and possible resulting chemical reactions
(5) overpressure resulting from operator error
(6) overpressure due to constant pressure in combination with a rising overtemperature condition
(7) overpressure due to pump overspeed

(f) Events whose overpressure effects are beyond the Scope of the rules of Subsection NH are covered by NB-7110(b) and include, for example:

(1) rapid closure of a check valve gate leads to fluid shock conditions in a local region
(2) earthquake motions induce sloshing of fluids contained in large tanks
(3) nuclear incident induces a severe pressure spike in a local region
(4) rapid closure of a valve during high flow rate conditions introduces pressure shocks

NH-7130 VERIFICATION OF THE OPERATION OF PRESSURE RELIEF DEVICES

Revise NB-7131 to read:

(a) Pressure relief devices shall be designed so that potential impairment of the overpressure protection function from service exposure to fluids can be determined by test or examination.

NH-7170 PERMITTED USE OF PRESSURE RELIEF DEVICES

Revise title of NB-7173 to read:
Valve Types Permitted for Water Service
Revise NB-7174 to read:
NB-7174 Nonreclosing Devices
Rupture disk devices may be used in air, gas, or liquid metal service in accordance with NB-7600.

NH-7200 CONTENT OF OVERPRESSURE PROTECTION REPORT

Add to NB-7220, the listing below:

(a) the effects of any thermal dissipation or discharge storage system on the pressure relief devices;
(b) the disposition of effluent from pressure relief devices for both primary and secondary reactor coolant fluids.

NH-7300 RELIEVING CAPACITY

Revise NB-7321(c) to read:
The system overpressure established for setting the required total rated relieving capacity of (b) above shall be such that the calculated stress intensity and other design