

Figure 3.4.11-1 (Page 1 of 1)
Non-Nuclear System Leakage and Hydrostatic Testing Curve

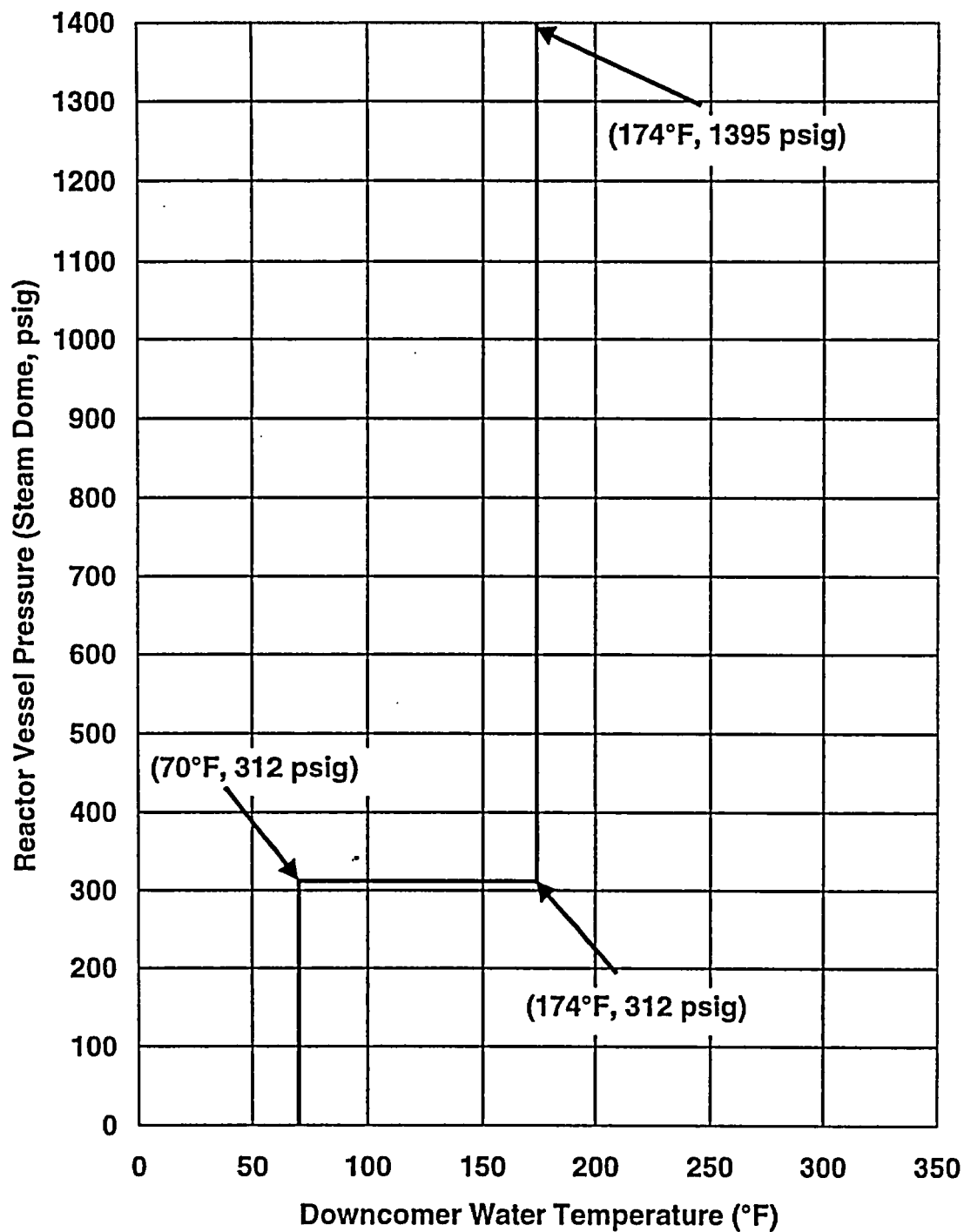


Figure 3.4.11-2 (Page 1 of 1)
Non-Nuclear Heatup Curve

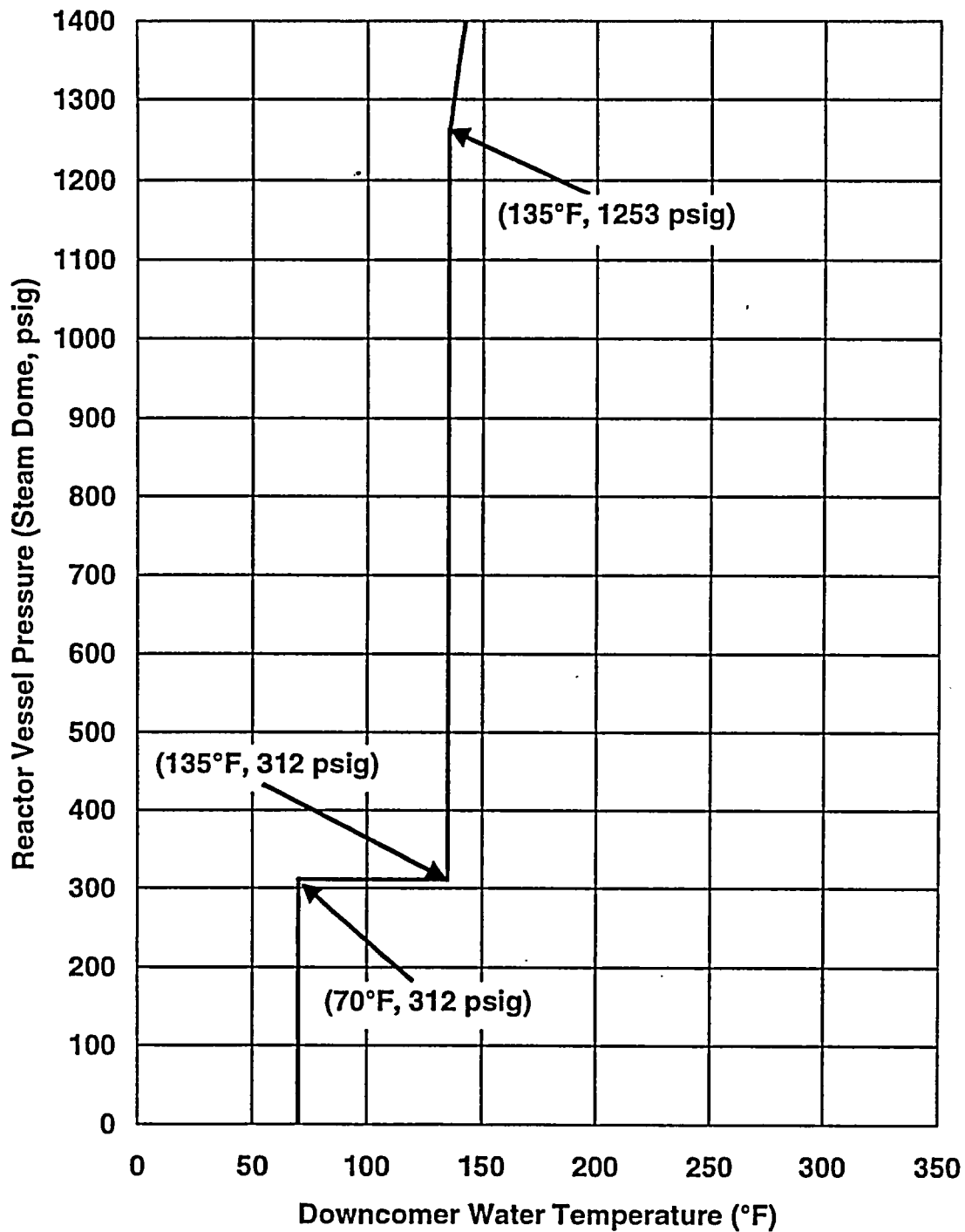


Figure 3.4.11-3 (Page 1 of 1)
Non-Nuclear Cooldown Curve

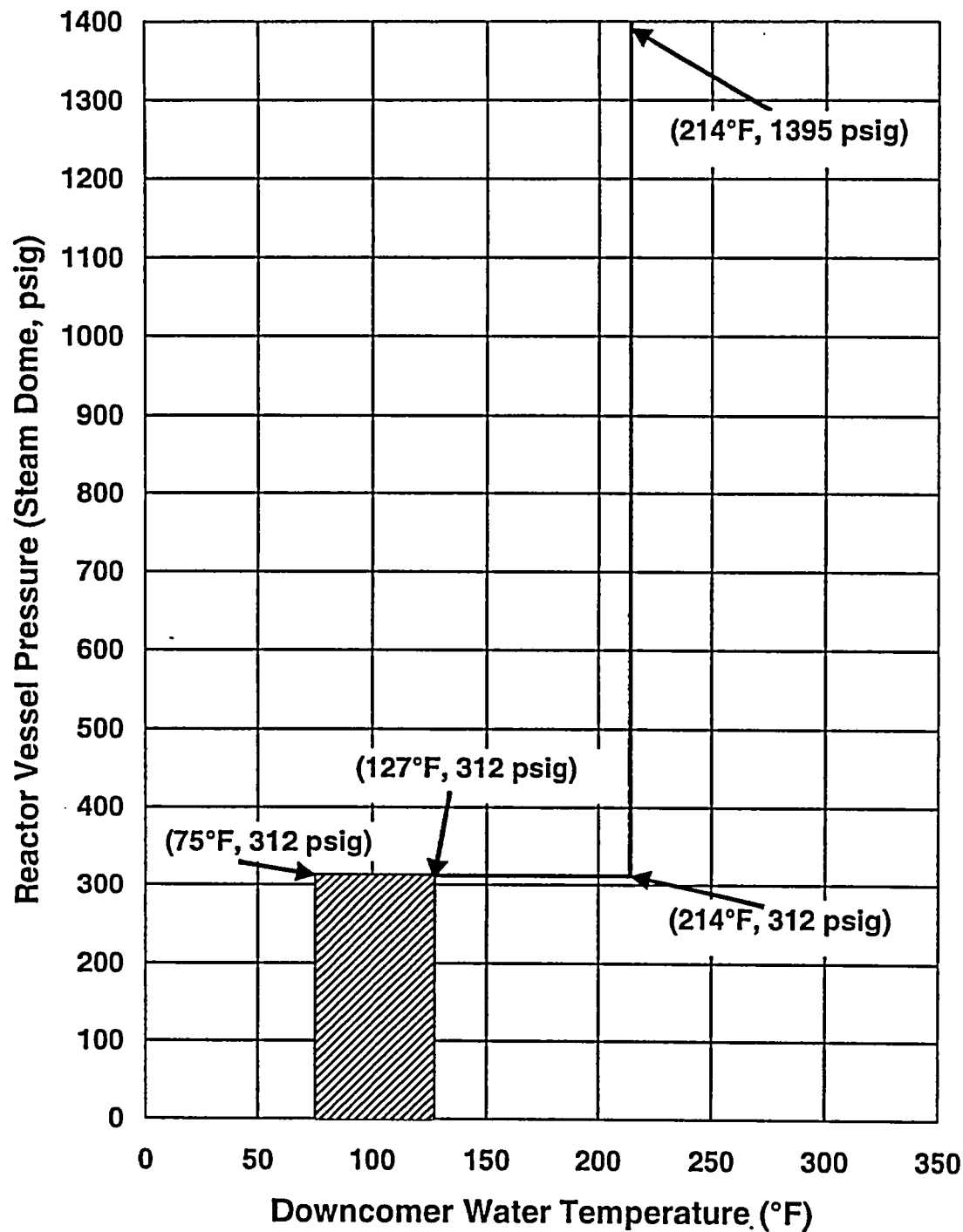


Figure 3.4.11-4 (Page 1 of 1)
Nuclear Heatup Curve

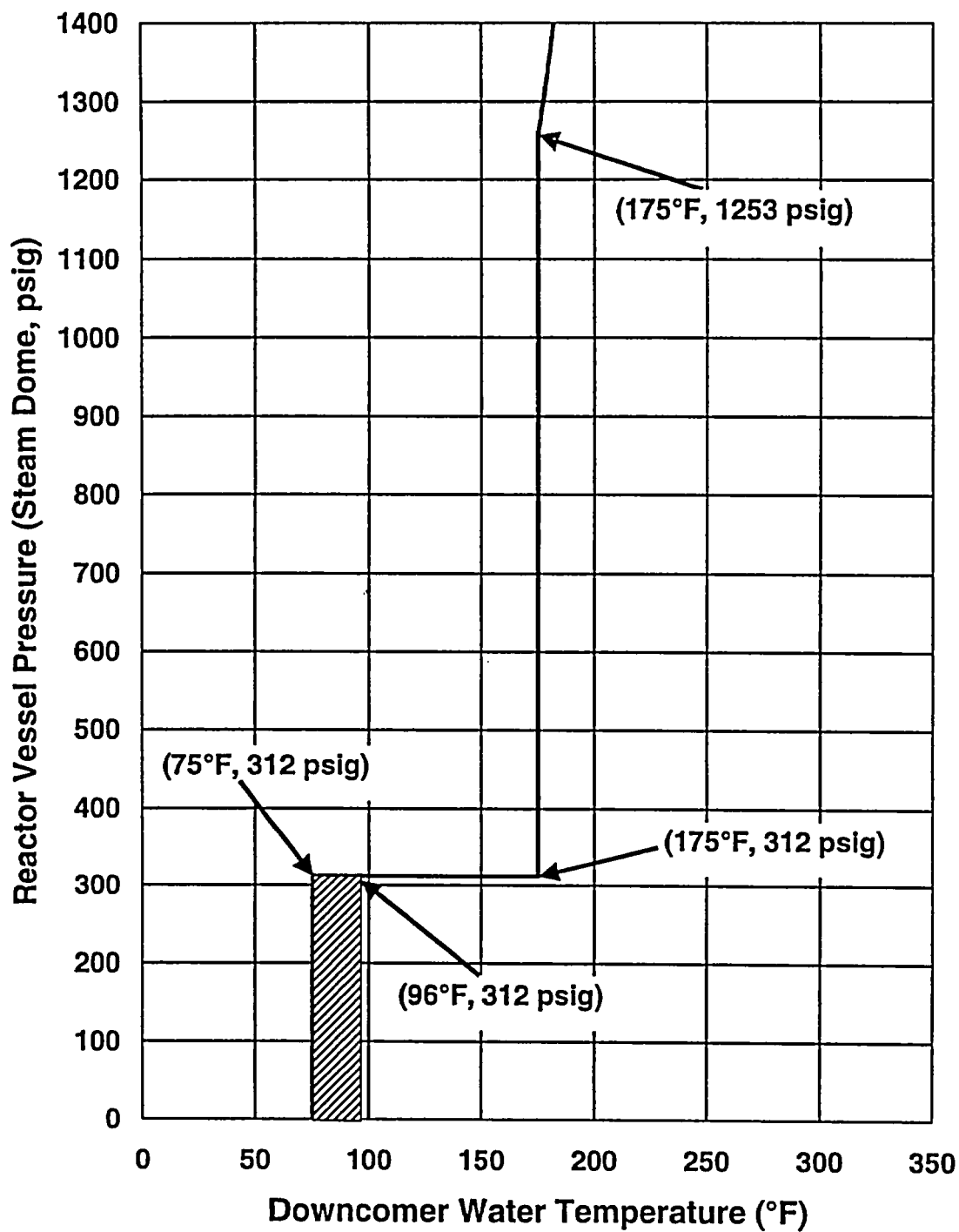


Figure 3.4.11-5 (Page 1 of 1)
Nuclear Cooldown Curve



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 110 TO FACILITY OPERATING LICENSE NO. NPF-69

NINE MILE POINT NUCLEAR STATION, LLC

NINE MILE POINT NUCLEAR STATION, UNIT NO. 2

DOCKET NO. 50-410

1.0 INTRODUCTION

By letter dated August 15, 2003, Nine Mile Point Nuclear Station, LLC (NMPNS, the licensee) for the Nine Mile Point Nuclear Station, Unit No. 2 (NMP2), submitted changes related to the reactor pressure vessel (RPV) pressure-temperature (P-T) limits in the NMP2 Technical Specifications (TSs). The licensee proposed to revise P-T limits which would be effective through 22 effective full-power years (EFPYs) of facility operation. The proposed changes to the P-T limits were based, in part, on the use of American Society of Mechanical Engineers (ASME) Code Case N-640.

To support the proposed amendment, the licensee submitted additional information by a letter dated September 15, 2003. This letter provided clarifying information that did not change the scope of the proposed amendment as described in the original notice of proposed action published in the *Federal Register*, and did not change the initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) has established requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 to protect the integrity of the reactor coolant pressure boundary in nuclear power plants. The NRC staff evaluates P-T limit curves based on the following NRC regulations and guidance: Appendix G to 10 CFR Part 50; General Design Criteria (GDC) 14, 30, and 31 of Appendix A of 10 CFR Part 50; Generic Letter (GL) 88-11; Regulatory Guide (RG) 1.99, Revision 2; RG 1.190; GL 92-01, Revision 1; GL 92-01, Revision 1, Supplement 1; and Standard Review Plan (SRP) Section 5.3.2. Appendix G to 10 CFR Part 50 requires that P-T limit curves for the RPV be at least as conservative as those obtained by applying the methodology of Appendix G to Section XI of the ASME Boiler and Pressure Vessel Code (ASME Code). GL 88-11 advised licensees that the NRC staff would use RG 1.99, Revision 2 to review P-T limit curves. RG 1.99, Revision 2, contains methodologies for determining the increase in transition temperature and the decrease in upper-shelf energy (USE) in RPV material resulting from neutron irradiation. GL 92-01, Revision 1, requested that licensees submit RPV data for review. GL 92-01, Revision 1, Supplement 1 requested that licensees provide and assess data from other licensees that could affect their RPV integrity evaluations. These data are used by the NRC as the basis for the review of P-T limit curves. SRP Section 5.3.2 provides an acceptable method of determining the P-T limit curves for ferritic materials in the beltline of the RPV based on the linear elastic fracture mechanics (LEFM) methodology of Appendix G to Section XI of the ASME Code.