

REQUEST FOR ADDITIONAL INFORMATION NO. 170-1856 REVISION 1

2/3/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 12.03-12.04 - Radiation Protection Design Features

Application Section: 12.3.1

QUESTIONS for Health Physics Branch (CHPB)

12.03-12.04-6

10 CFR 20.1101(b), 1201 and 1202 require licensees to control internal and external occupational exposure, and to ensure that engineering controls are used to keep occupational doses ALARA. In 10 CFR 20 the definition for ALARA includes guidance to make every reasonable effort to maintain exposures below regulatory limits, taking into account the state of technology. Regulatory Guide 1.206 section C.I.12.3.1 "Facility Design Features" notes that the Applicant should identify features that reduce the potential for exposure by minimizing the time in the area, reducing source build up, providing remote operation and reducing activation product generation.

APWR DCD Section 12.3.1.1.1.2 does not discuss any filter media specifications. DCD Section 9.3.4.2.6, discusses nuclear plant filters, but does not provide any performance specifications for these filters. Industry standard documents note that experience in Westinghouse plants shows that using 0.1 micron seal injection filters improves seal life. For an operating plant, the result of improved seal life would be less work and dose associated with seal maintenance and replacement. This method of material specification is a known, proven, cost effective and documented dose reduction technique. DCD Section 12.3.1.1.1.1 "Nuclear Steam Supply System Equipment", or Section 12.3.1.1.2.A "Balance of Plant Equipment - Filters" fail to note this aspect as part of the design bases for the equipment.

In accordance with RG 1.206, please revise chapter 12.3.1.1.1 to include the information that describes the ALARA related design specifications for the material selection of filters, or, revise chapter 12.3.1.1.1 to provide justification for not specifying a known and proven exposure reduction method and material as part of the design features discussed in section 12.3.1.1.1.