ArevaEPRDCPEm Resource

From: BRYAN Martin (EXTERNAL AREVA) [Martin.Bryan.ext@areva.com]
Sent: Monday, July 19, 2010 8:09 AM
To: Tesfaye, Getachew
Cc: DELANO Karen (AREVA); ROMINE Judy (AREVA); BENNETT Kathy (AREVA); SLAY Lysa (AREVA); COLEMAN Sue (AREVA); PATTON Jeff (AREVA); SANDERS Harris (AREVA); RYAN Tom (AREVA); WILLIFORD Dennis (AREVA); GARDNER George Darrell (AREVA); KOWALSKI David (AREVA); CONNELL Kevin (AREVA); HUDDLESTON Stephen (AREVA); CAUSEY Franklin (AREVA); BROUGHTON JR Ronnie (AREVA)
Subject: DRAFT Response to U.S. EPR Design Certification Application RAI No.406, FSAR Ch. 9, Question 09.04.01-02
Attachments: RAI 406 Response US EPR DC - DRAFT-Question 09.04.01-02.pdf

Getachew,

On July 16, AREVA NP provided a schedule to respond to the questions of RAI 406 (August 31, 2010). Attached is a response to question 09.04.01-2. Let me know if the staff has questions or if this response can be sent as a final response.

Thanks,

Martin (Marty) C. Bryan
U.S. EPR Design Certification Licensing Manager
AREVA NP Inc.
Tel: (434) 832-3016
702 561-3528 cell
Martin.Bryan.ext@areva.com

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Created By: Martin.Bryan.ext@areva.com

Recipients:
"DELANO Karen (AREVA)" <Karen.Delano@areva.com>
Tracking Status: None
"ROMINE Judy (AREVA)" <Judy.Romine@areva.com>
Tracking Status: None
"BENNETT Kathy (AREVA)" <Kathy.Bennett@areva.com>
Tracking Status: None
"SLAY Lysa (AREVA)" <Lysa.Slay@areva.com>
Tracking Status: None
"COLEMAN Sue (AREVA)" <Sue.Coleman@areva.com>
Tracking Status: None
"PATTON Jeff (AREVA)" <Jeff.Patton@areva.com>
Tracking Status: None
"SANDERS Harris (AREVA)" <Harris.Sanders@areva.com>
Tracking Status: None
"RYAN Tom (AREVA)" <Tom.Ryan@areva.com>
Tracking Status: None
"WILLIFORD Dennis (AREVA)" <Dennis.Williford@areva.com>
Tracking Status: None
"GARDNER George Darrell (AREVA)" <Darrell.Gardner@areva.com>
Tracking Status: None
"KOWALSKI David (AREVA)" <David.Kowalski@areva.com>
Tracking Status: None
"CONNELL Kevin (AREVA)" <Kevin.Connell@areva.com>
Tracking Status: None
"HUDDLESTON Stephen (AREVA)" <Stephen.Huddleston@areva.com>
Tracking Status: None
"CAUSEY Franklin (AREVA)" <Franklin.Causey@areva.com>
Tracking Status: None
"BROUGHTON JR Ronnie (AREVA)" <Ronnie.Broughton@areva.com>
Tracking Status: None
"Tesfaye, Getachew" <Getachew.Tesfaye@nrc.gov>
Tracking Status: None

Post Office: AUSLYNCMX02.adom.ad.corp

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Response to

Request for Additional Information No. 406(4683, 4664, 4707), Supplement 1, Revision 0

6/16/2010

U.S. EPR Standard Design Certification
AREVA NP Inc.
Docket No. 52-020
SRP Section: 09.02.02 - Reactor Auxiliary Cooling Water Systems
SRP Section: 09.04.01 - Control Room Area Ventilation System
SRP Section: 09.05.01 - Fire Protection Program

Application Section: FSAR Chapter 9

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)
QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)
QUESTIONS for Balance of Plant Branch 1 (SBPA)

DRAFT

Question 09.04.01-2:

Follow-up to RAI 267, Question 12.03-12.04-16

Provide the HVAC Filter Design Feature and Anticipated Operating Procedure.

10 CFR 52.47(a)(6) and 10 CFR 20.1406 , "Minimization of Contamination," require applicant to demonstrate that the facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility and the environment.

The staff noted from the applicant's RAI response that the HVAC filters would be designed, fabricated, and tested in accordance with ASME AG-1. During operation, a negative pressure with respect to the adjoin environment will be created in the housing. However, the response did not indicate if there exists any design feature and anticipated operating procedures to minimize the possibility for HVAC system filter element from failure during operation. Provide this area of information to have reasonable assurance that the consequences with respect to the spread of contamination with a filter failure will be minimized.

Response to Question 09.04.01-2:

The engineered safety features (ESF) filtration systems containing replaceable filter elements are periodically tested to meet the requirements of ANSI/ASME N510 for in-place testing for high efficiency particulate air (HEPA) filters and the carbon adsorbers bypass leakage. This testing will verify the proper operation of the filters and identifies any air bypass leakage to facilitate repairs/replacement. The carbon used in the carbon adsorbers is tested to ASTM D 3803 requirements for laboratory efficiency. A visual inspection is made periodically of the other components, such as the electric heaters, pre-filters, and dampers. The pressure drop (or resistance) across all the filters (pre-filters, HEPA filters, and carbon adsorbers) is continuously monitored by a differential pressure transmitter. The transmitter will annunciate an alarm in the main control room (MCR) to alert operations personnel of a concern with high filter differential pressure (ΔP). Local ΔP gauges are provided for operator rounds to monitor and verify that the filters are maintained below the maximum allowable set point values for accumulated particulates.

The ESF filtration unit electric heater voltage and amperage is measured during periodic test to verify that the electric heaters are meeting the performance (kW) requirements of ANSI/ASME N510. In ESF filtration units with moisture separators/prefilters, the moisture separators/prefilters are tested (local inlet and outlet pressure gauges are used) to verify that the pressure drop across these components is below the allowable differential pressure (ΔP) limits.

The possibility of filter element failure is eliminated by implementing these periodic visual inspections, maintenance, and testing. Local radiation monitors detect any spread of contamination in the surrounding area. If radioactive contamination is detected, proper administrative controls are implemented to perform the necessary maintenance and testing. These design features reduce the likelihood of filter failure and minimize the risk of the spread of contamination from the ventilation systems.

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FSAR Impact:

The U.S. EPR FSAR will not be changed as a result of this question.

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