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U.S. Nuclear Regulatory Commission
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Your ref: Docket No. 52-006
Our ref: DCP/NRC2345

January 19, 2008

Subject: AP1000 Onsite Chemical RAI Revisions

Two COL applicants referencing the AP1000 Design Certification have received requests for additional information (RAIs) from the NRC relative to onsite chemical used in the AP1000. These RAIs were included in References 1 and 2. Changes to the AP1000 Design Control Document (DCD) to support the responses to these RAIs have been identified as part of the preparation and review of these RAI responses. Attached to this letter are mark-ups of changes to be incorporated into the AP1000 DCD. The changes to the DCD that support the RAIs are expected to be generic and apply to all COL applicants referencing the AP1000 Design Certification.

The DCD changes identified relate to the storage of hydrogen. The DCD changes are provided to clarify the design of the AP1000 described in the DCD. The changes identified in the DCD mark-up do not alter the design of the AP1000. The changes in the DCD mark-up do not change the assumptions or conclusion of the evaluation of potential hydrogen leaks or explosions.

Questions related to the content and preparation of this letter should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

Robert Sisk, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

D063
NRO

cc:	B. Gleaves	-	U.S. NRC	1E
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References

1. Letter from Joseph Sebrosky (NRC) to Andrea L. Sterdis (TVA), Request for Additional Information Letter No. 137 Related to SRP Section 02.02.03 for the Bellefonte Units 3 and 4 Combined License Application, dated November 18, 2008

2. Letter from Christian Araguas (NRC) to Joseph A. (Buzz) Miller (Southern), Request for Additional Information Letter No. 019 Related to SRP Section 02.02.03 for the Vogtle Electric Generating Plant Units 3 and 4 Combined License Application, dated December 12, 2008

Revise Table 6.4-1 as follows:

Table 6.4-1

ONSITE CHEMICALS

Material	State	Location
Hydrogen	Liquid/Gas	Gas storage
Nitrogen	Liquid	Gas storage.
CO_2	Liquid	Gas storage.
Oxygen Scavenger	Liquid	Turbine building
pH Addition	Liquid	Turbine building, CWS area[a]
Sulfuric Acid	Liquid	Turbine building, CWS area[a]
Sodium Hydroxide	Liquid	Turbine building, CWS area[a]
Dispersant[a]	Liquid	Turbine building, CWS area[a]
Fuel Oil	Liquid	DG fuel oil storage tank/DG building/ Annex building
Corrosion Inhibitor	Liquid	Turbine building, CWS area[a]
Scale Inhibitor	Liquid	Turbine building, CWS area[a]
Biocide/Disinfectant	Liquid	Turbine building, CWS area[a]
Algicide	Liquid	Turbine building, CWS area[a]

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Note:
a. Site-specific

Add information to Subsection 9.3.2.2.2 as follows:

9.3.2.2.2 Component Description

Liquid Hydrogen Storage Tank

Cryogenic liquid hydrogen is stored in a dual wall tank. The annular space between the walls is insulated using a vacuum and wrapped reflective insulation to minimize heat leakage.

Hydrogen Ambient Air Vaporizers

Two parallel banks of vaporizers are provided. In the event of frost buildup on the active bank, flow is redirected to the opposite bank while the other bank defrosts.

Gaseous Hydrogen Storage Tanks

Gaseous hydrogen storage tanks are used to provide for storage of high-pressure hydrogen.

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Liquid Carbon Dioxide Storage Tank

Cryogenic liquid carbon dioxide is stored in an insulated single wall tank to minimize heat transfer.

Revise the second paragraph of Subsection 9.3.2.2.3 as follows:

Liquid hydrogen is stored in a cryogenic storage vessel complete with an economizer circuit and a pressure build circuit. Ambient air vaporizers turn the liquid to a gas, which is pressure regulated. See subsection 9.3.6 for further discussion of hydrogen use in the chemical and volume control system. The hydrogen used in the chemical and volume control system is supplied from the high pressure gaseous hydrogen storage tanks.

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