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February 17, 2010

Document Control Desk
U.S, Nuclear Regulatory Commission
Washington, DC 20555
Attn: Mr. Duane Hardesty

Dear Mr. Hardesty,

Subject: License Amendment Request (LAR) for Digital Control System Upgrade (1st batch of documents) - University of Florida Training Reactor (UFTR), DOCKET NO. 50-83

As a follow up to our meetings on Oct. 16, 2009 and Jan 19, 2010, I am submitting the first batch of documents in support of the UFTR LAR for Digital Control System Upgrade. This 1st batch contains the following documents:

- UFTR-QA1-01, "Software Quality Assurance Plan (SQAP)"
- UFTR-QA1-02, "Software Configuration Management Plan (SCMP)"
- UFTR-QA1-05, "Software Safety Plan (SSP)"
- UFTR-QA1-06.1, "Software Test Plan - SIVAT Plan"
- UFTR-QA1-105, "TELEPERM XS Cyber Security"

It is important to note that for the UFTR, the "reactor safety" or "safety-related" terminology, does not have the same safety significance of like a power reactor. According to ANSI/ANS 15.1 standard, the Reactor Safety Systems are defined: "those systems, including their associated input channels that are designed to initiate automatic protective action or to provide information for initiation of manual protective action."

Further, as discussed at our aforementioned Oct and Jan meetings, the UFTR has unique safety features as follow:

- Low power (the peak power per bundle = 5 kW)
- Thin, metallic fuel plates with high thermal conductivity
- Low fuel temperature (~50 C)
- Even under unprotected insertion of 0.6%, after 300 seconds, core reaches an equilibrium power level of about 600 kW; the peak fuel temperature is ~108C (fuel melting point is 582 C)
- Negative coefficients of reactivity

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- In addition to the control blade scram mechanism, the reactor can be shutdown by dumping the coolant.

Because of the above features, for the UFTR digital protection system, the following applies:

- No need for Engineering Safety Features Actuate System (ESFAS),
- One train protection and control system,
- No concern for Common Cause Failure (CCF), because no redundancy is required,
- No EQ or seismic qualification required, and
- No safety-related power supply necessary.

If you need further information, please do not hesitate to contact me at haghighat@ufl.edu or (352) 392-1401 x306.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 2/17/10

Sincerely,

Alireza Haghighat, PhD
FP&L Endowed Chair Professor
Director of UFTR

Cc Jack Donohue, NRC
Gabriel Ghita, UF
David Hintenlang, Interim Chair
Brian Shea, UFTR Manager
Glenn Sjoden, RSRS Chair
Eric Wallace, AREVA
UFTR – NRC file

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