

From: Mike Billone <billone@anl.gov> ^{RES}
To: "Harold Scott (Harold Scott)" <hhs@nrc.gov>, "Ralph Meyer (Ralph Meyer)" <rom@nrc.gov>, "Robert E. Einziger" <REE1@nrc.gov>, "Odelli Ozer (Odelli Ozer)" <oozer@epri.com>, "Rosa Yang (Rosa Yang)" <ryang@epri.com>, Garry Garner <Garry.Garner@framatome-anp.com>, Bert Dunn <Bert.Dunn@framatome-anp.com>, "Gerald Potts (Gerald Potts)" <Gerald.Potts@gnf.com>, "David J. Colburn" <colburdj@westinghouse.com>, Nancy Slater-Thompson <Nancy.Slater@rw.doe.gov>
Date: 1/13/06 10:25AM
Subject: Contingency Plan

Dear Sponsors,

I was asked by ANL management to write a contingency plan in the event that the AGHCF were to be closed or that there would be significant delays in reopening the AGHCF. The plan was due to ANL management on January 16th. That is why the public and casual announcement in today's Argonne News came as such a shock to me.

Enclosed is the summary of how we can continue to do programmatic work outside the AGHCF. Following the summary, is a more detailed description of how and where the tests will be conducted in non-nuclear-facility areas, which do not require a Documented Safety Analysis (DSA) or the very difficult Unreviewed Safety Question (USQ) procedures. These areas are radioactive control areas (e.g., labs with glove boxes) and beta-gamma hot cells (no fuel).

I will have the details on a program-by-program basis for you by the end of the day. I hope that this plan will help you make decisions with regard to the best way for you to proceed to have data generated on a cost-effective and schedule-consistent basis.

Mike

A-3

Contingency Plan to Continue Programmatic Work outside of the AGHCF

M.C. Billone

January 12, 2006

Executive Summary

A contingency plan has been developed that will allow programmatic work to continue if the AGHCF is closed to programmatic work or if there is a significant delay in reopening the AGHCF to programmatic work. The plan addresses the data needs of our major sponsors: NRC, EPRI-Framatome, and DOE-RW.

Most of data ($\approx 80\%$) needed by NRC to resolve LOCA and Spent-Nuclear-Fuel (SNF) storage/transport issues can be performed in non-controlled areas and in the Irradiated Materials Laboratory (IML), which is a non-nuclear facility that does not require a DSA or the USQ process. The dominant effects of burnup on cladding behavior are increased hydrogen pickup and increased irradiation hardening. Baseline data using nonirradiated-prehydrided cladding alloys can be generated in non-controlled areas. These areas have been secured and movement of equipment from AGHCF to these areas will be completed by January 25th. Upon completion of this work (\approx April 2006), the out-of-cell LOCA oxidation/integral apparatus will be moved to an IML cell to enable the testing of defueled, high-burnup cladding alloys. A limited supply of defueled, high-burnup M5 and ZIRLO cladding is available at ANL to initiate this work. Previously, defueled and fueled high-burnup cladding alloys were tested in the AGHC in-cell LOCA oxidation/integral apparatus, which would remain at that location. SNF mechanical-properties testing is being performed in the IML. Work for EPRI-Framatome (June-December 2006) can also be conducted in the IML. However, to secure the EPRI-Framatome project, ANL or a partner lab must accept the 4 high-burnup M5 fuel rods to be shipped from INL in June 2006.

For the defueled cladding, test sample preparation (e.g., cutting, cleaning, etc.) is required. This work is currently performed in glove boxes in the Electron Beam Laboratory (EBL), which is an extension of the AGHC area. The work can continue in this area if the doorway from the AGHC to the EBL is sealed off and the EBL, which has no fuel, is reclassified as a non-nuclear facility. There is a separate hallway entrance to the EBL. This would also allow the use of the imaging equipment (SEM) in the EBL. The work could be moved to glove boxes in other non-nuclear-facility areas, but this may cause significant schedule delays. In order to conduct the full test matrix, we would need to outsource the sectioning/defueling of high-burnup rod fuel segments (≤ 0.9 m) to outside alpha-gamma hot-cell facility. BWXT is a candidate if they have the facilities. The defueled samples (76-mm long) would be shipped back to ANL by air transport for testing. The cost of outsourcing this work would be more than offset by not having to pay AGHCF management and maintenance charges (30% of research budget).

NRC and DOE-RW work with fueled cladding, which could not be performed at ANL outside the AGHC, includes LOCA integral tests, SNF bending and impact tests, and fabrication and shipment of rodlets for SNL SNF-cask-sabotage testing. The NRC and DOE-RW confirmatory tests are limited in number, and it would not be cost-effective or schedule-consistent to outsource this work. FY2006-and-beyond funding for the DOE-RW-funded ANL and SNL work has not yet been approved.

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Subject: Contingency Plan
Creation Date: 1/13/06 10:24AM
From: Mike Billone <billone@anl.gov>

Created By: billone@anl.gov

Recipients

nrc.gov

twf4_po.TWFN_DO
REE1 (Robert Einziger)
ROM (Ralph Meyer)

nrc.gov

twf5_po.TWFN_DO
HHS (Harold Scott)

rw.doe.gov

Nancy.Slater (Nancy Slater-Thompson)

westinghouse.com

colburdj (David J. Colburn)

gnf.com

Gerald.Potts (Gerald Potts (Gerald Potts))

framatome-anp.com

Bert.Dunn (Bert Dunn)
Garry.Garner (Garry Garner)

epri.com

ryang (Rosa Yang (Rosa Yang))
oozer (Odelli Ozer (Odelli Ozer))

Post Office

twf4_po.TWFN_DO
twf5_po.TWFN_DO

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westinghouse.com
gnf.com
framatome-anp.com
epri.com

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