



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 21, 2019

MEMORANDUM TO: Dennis C. Morey, Chief
Licensing Processes Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

FROM: Joseph A. Golla, Project Manager */RA/*
Licensing Processes Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF PARTIALLY CLOSED MEETING WITH GLOBAL
NUCLEAR FUEL ON JUNE 5, 2019, REGARDING ARMOR FUEL

On June 5, 2019, the U.S. Nuclear Regulatory Commission (NRC) staff held a partially closed public meeting with representatives of Global Nuclear Fuel (GNF) and General Electric Hitachi (GEH) regarding GNF's "ARMOR" (abrasion resistant, more oxidation resistant) fuel technology. The purpose of the meeting was for GNF to provide the NRC staff with an update on ARMOR fuel technology and licensing plans.

The meeting was structured with a public portion at the beginning, then a portion that was closed to the public where GNF commercial proprietary information was discussed, and an open portion at the end. A list of attendees is enclosed with this summary.

After opening remarks Mr. Andrew Proffitt, Project Manager, Office of Nuclear Reactor Regulation made a brief regarding NRC preparations to license accident tolerant fuel (ATF). No presentation slides were used for his briefing.

After this portion of the meeting, the "closed" portion was held whereby representatives of GNF provided presentations. A public version of these presentations may be viewed at the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML19200A140. (Note, due to an extensive amount of GNF proprietary information in these presentation slides, this public version has been heavily redacted.)

Discussion topics for the meeting included:

- NRC public update on ATF
- ATF LTA update (Clinton / Hatch / Other Plants)
- ARMOR testing data update
- Full scale tube production readiness
- PNNL PIRT relative to ARMOR
- LOCA ARMOR modeling

- LUA / LTA updates to GESTAR
- High burnup / increased enrichment
- Closing summary and public comment

The following was expressed by the NRC staff at the meeting:

- Staff informed GNF that material properties of fuel cladding must be characterized at low temperatures to support transportation licensing actions.
- The staff would like GNF to engage early on any statistical methods that they may use in their topical reports due to previous difficulties during reviews in this area.
- The staff would like to better understand GNF's strategy for showing equivalency between test material and production ATF.
- NRC staff are interested in attending experimental testing for ATF, this has shown beneficial to review efficiency in the past, so the staff would appreciate being kept abreast of testing schedules and any opportunity to observe.
- The staff reminded GNF to engage the Office of Nuclear Material Safety and Safeguards (NMSS) on fuel cycle considerations with the same vigor and thoroughness as with NRR on in-reactor analysis.
- The staff seeks to better understand GNF's fuel enrichment extension plans, including the maximum enrichment that may be sought for the current fleet of operating reactors.

There were no members of the public present in the meeting room or on the phone for the closing public portion of the meeting.

CONTACT: Joseph A. Golla, NRR/DLP/PLPB
301-415-1002

Enclosure: Attendees List

SUBJECT: SUMMARY OF PARTIALLY CLOSED MEETING WITH GLOBAL NUCLEAR FUEL
ON JUNE 5, 2019, REGARDING ARMOR FUEL DATE: AUGUST 21, 2019

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ADAMS Accession No.: ML19227A094 Summary *concurred via email NRC-001

OFFICE	NRR/DLP/PLPB/PM	NRR/DLP/PLPB/BC	NRR/DLP/PLPB/PM
NAME	JGolla	DMorey	JGolla
DATE	8/19/2019	8/20/2019	8/21/2019

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NRC PARTIALLY CLOSED MEETING WITH GLOBAL NUCLEAR FUEL

ON JUNE 5, 2018, REGARDING ARMOR FUEL

ATTENDEE LIST

Patty McCumbee	GNF
Guangun Li	GEH
Tyler Schweitzer	GNF
Russ Fawcett	GNF
Fran Bolger	GEH
Yang-Pi Lin	GNF
Kent Halac	GNF
Myles Connor	GEH
Andrew Proffitt	NRC
Josh Whitman	NRC
Josh Borromeo	NRC
Jane Marshall	NRC
Mike Markley	NRC
Mathew Panicker	NRC
Tae Ahn	NRC
William Richards	NRC
Joseph Messina	NRC
Robert Schaaf	NRC
Paul Clifford	NRC
Robert Lukes	NRC
Joel Wiebe	NRC
Mirela Gavrilas	NRC
Lucas Kyriazidis	NRC
Marilyn Diaz-Maldonado	NRC
Joe Golla	NRC

Enclosure