

November 21, 2003

MEMORANDUM TO: Ashok C. Thadani, Director  
Office of Nuclear Regulatory Research

FROM: Martin J. Virgilio, Director **/RA/**  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: USER NEED FOR COORDINATION OF PROGRAM OFFICE NEEDS  
FOR DEVELOPMENT AND APPLICATION OF AUTOMATED  
SCIENTIFIC CODES

This memorandum requests that the Office of Nuclear Regulatory Research (RES) assist the Office of Nuclear Material Safety and Safeguard (NMSS) in establishing a collaborative process involving agency stakeholders (e.g., NMSS, Office of Nuclear Reactor Regulation (NRR) and RES) for coordinating Program Office needs for development and application of automated scientific codes that are suitable for use for NMSS and NRR applications.

#### Background

A recently resolved Differing Professional View (DPV) requested that "NMSS establish a position on the use of codes, estimation techniques, and parameters that is consistent, peer-reviewed, conservative, provides adequate assurances of safety, and defensible [this could be a Branch Technical Position (from the Fuel Cycle Facilities Branch) or a separate guidance document (say, a NUREG document)]." (NMSS-DPV-2002-03) The author expressed concern that there is a lack of a collaborative process (involving internal and external stakeholders) for agency development, endorsement and acceptance of automated scientific codes. The specific concern expressed in the DPV pertains to various generic automated scientific codes used to model dispersion of the same or similar hazardous material (e.g., ARCON96, ALOHA).

A collaborative process would contribute to NMSS efforts for ensuring that licensing reviewers sufficiently understand codes, their specific applications, and results to determine their reasonableness for safety related decision-making. To the extent practicable, other regulators (e.g., Environmental Protection Agency (EPA), National Oceanic and Atmospheric Administration (NOAA), Occupational Safety and Health Administration (OSHA) and U.S. Department of Energy (DOE)) and stakeholders should be informed of NRC development and application of generic scientific codes when appropriate. In this regard, an NRC public web page could be established to inform internal and external stakeholders about NRC code work.

CONTACT: Jennifer Davis, NMSS/FCSS  
(301) 415-5874

### Scope and Schedule of Requested Tasks

Specifically, NMSS requests that RES:

- 1) Assist NMSS in establishing a collaborative process involving agency stakeholders (e.g., NMSS, NRR and RES) for coordinating Program Office needs for development and application of automated scientific codes, used to model dispersion of the same or similar hazardous material, that are suitable for use for NMSS and NRR applications;
- 2) Assist NMSS in determining how best to inform other regulators (e.g., EPA, NOAA, OSHA and (DOE)) and stakeholders of NRC development and application of generic scientific codes used to model dispersion of the same or similar hazardous material, when appropriate;
- 3) Assist NMSS in establishing an NRC public web page to inform internal and external stakeholders about this NRC code work; and
- 4) Evaluate the usefulness of the collaborative process, the effectiveness of informing other regulators, and the usefulness of the public information web page, and determine whether such activities would be useful for all generic automated scientific codes used for NRC applications.

### Scope and Schedule for Requested Tasks

1. Establish a collaborative process.

Estimated Completion Date: March, 2004.

2. Determine the best method for informing other regulators.

Estimated Completion Date: March, 2004.

3. Establish a public web page.

Estimated Completion Date: September, 2004.

4. Recommend whether these activities would be useful for all generic automated scientific codes used for NRC applications.

Estimated Completion Date: September 2005.

### References

- (1) Memorandum from M. Virgilio to R. Pierson, "Requested FCSS Actions to Implement NMSS Director's Decision on Differing Professional View Concerning Modeling Chemical Consequence Effects for Determining Safety Requirements at the Proposed Mixed Oxide Fuel Fabrication Facility, Docket Number 070-03098 (NMSS-DPV-2002-03)," dated October 3, 2003.

- (2) Memorandum from C. Miller to M. Virgilio, "DPV Panel Report: Review of Differing Professional View on Modeling Chemical Consequence Effects for Determining Safety Requirements at the Proposed Mixed Oxide Fuel Fabrication Facility, Docket Number: 070-03098 NMSS-DPV-2002-03," dated September 30, 2003.
- (3) Memorandum from A. Murray to M. Virgilio, " Differing Professional View on Modeling Chemical Consequence Effects for Determining Safety Requirements at the Proposed Mixed Oxide (MOX) Fuel Fabrication Facility, Docket Number: 070-03098," dated December 19, 2002. (NMSS-DPV-2002-03)

November 21, 2003

- (2) Memorandum from C. Miller to M. Virgilio, "DPV Panel Report: Review of Differing Professional View on Modeling Chemical Consequence Effects for Determining Safety Requirements at the Proposed Mixed Oxide Fuel Fabrication Facility, Docket Number: 070-03098 NMSS-DPV-2002-03," dated September 30, 2003.
- (3) Memorandum from A. Murray to M. Virgilio, " Differing Professional View on Modeling Chemical Consequence Effects for Determining Safety Requirements at the Proposed Mixed Oxide (MOX) Fuel Fabrication Facility, Docket Number: 070-03098," dated December 19, 2002. (NMSS-DPV-2002-03)

**DISTRIBUTION:**

NMSS r/f      FCSS r/f                      SPIB r/f  
 DBrown      AMurray                      CMiller      WSchwink      SMcGuire/NSIR  
 JHolonich      APersinko                      AHoadley

\*See previous concurrence

**ML033160142**

<b>OFFICE</b>	FCSS		SPIB		SPIB		FCSS		NMSS	
<b>NAME</b>	JDavis*		BSmith*		JGitter*		RPierson		MVirgilio	
<b>DATE</b>	11/12/03		11/12/03		11/13/03		11/14/03		11/21/03	

INDICATE IN BOX: "C"=COPY W/O ATTACHMENT/ENCLOSURE, "E"=COPY W/ATT/ENCL, "N"=NO COPY

**OFFICIAL RECORD COPY**