

May 30, 1997

MEMORANDUM TO: Donald A. Cool, Director
Division of Industrial and
Medical Nuclear Safety, NMSS

FROM: John T. Greeves, Director [Original signed by M. Federline for:]
Division of Waste Management, NMSS

SUBJECT: DIVISION OF WASTE MANAGEMENT COMMENTS ON THE AGENCY-WIDE PLAN
FOR HUMAN RELIABILITY ASSESSMENT AND
HUMAN PERFORMANCE EVALUATION

The Division of Waste Management has completed its review of the subject document as requested in your May 20, 1997, letter. Our comments are attached.

Attachment: As stated

CONTACT: Christiana Lui, DWM
(301) 415-6200

TICKET: DWM-143

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**COMMENTS ON
AGENCY-WIDE PLAN FOR HUMAN RELIABILITY ASSESSMENT
AND HUMAN PERFORMANCE EVALUATION**

1. The relationship between the ATHEANA framework and the various proposed programs and their associated activities is not always obvious, i.e., how the conceptual approach in ATHEANA can be appropriately applied to the various human reliability assessment (HRA) and human performance evaluation (HPE) needs of the agency given that the needs are quite diverse. Why would the ATHEANA framework be universally applicable to all HRA and HPE issues? Some clarification is necessary.
2. For a plan, there is no time frame for implementation (e.g., will all programs/activities occur at the same time), no specification of required resources and no identification of support needed from other Offices to ensure that the products are useful to the users. In addition, a separate list of acronyms used would be quite helpful.
3. The ATHEANA framework may be acceptable for the purpose of HRA because it is essentially a binary model, i.e., it tries to predict whether people will succeed or fail given specific situations. However, for HPE, it's not obvious that this framework is adequate. For example, where and how in this framework is human performance explicitly treated, and is it appropriate that performance be measured in terms of failure rates? Basically, the ATHEANA framework seems to be sufficient for high profile events, such as TMI and Chernobyl, however, for regular auditing and inspection activities where no adverse outcome has occurred, the ATHEANA framework does not seem to always be applicable in identifying human performance issues and evaluating their level of severity.
4. The ATHEANA philosophy which tries to avoid placing blame on any individual or team is well-meaning. However, sometimes there are mistakes or even intentional acts and responsibilities must be recognized to facilitate follow-up actions. Does this framework affect NRC's ability to deal with these situations?
5. The plan needs to clarify which performance shaping factors (PSFs) and error-forcing contexts (EFCs) are going to be explicitly treated and which are going to be included in the background (as "randomness"). The plan specifically addresses human-system interface related PSFs and plant condition-related EFCs. Other possible influences that can have a major effect include time of day, morale (individual and staff), and ability (individual and staff). It would probably be useful to list assumptions and boundary conditions for the programs. ATHEANA rightfully addresses a number of issues that can be influenced by NRC. Therefore, degree of control should be a major factor in defining the boundary conditions.