



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

September 17, 1993

MEMORANDUM TO: Gerald F. Cranford, Director
Office of Information Resources Management

FROM: John T. Larkins
Executive Director, ACRS

SUBJECT: ADVISORY COMMITTEE ADVANCED INFORMATION
MANAGEMENT SYSTEM - REQUEST FOR IRM SUPPORT

In close consultation with IRM, the concept of an advanced, computerized information management system (AIMS) to support ACNW and ACRS reviews has been under development by the Advisory Committee staff for the past year. We have developed an initial needs assessment and set of general functional requirements for the system and are now ready to proceed with the development of detailed functional and performance requirements and the preparation of an implementation plan for AIMS.

Discussion

We envision the installation of AIMS in our new facilities at Two White Flint North (TWFN), second floor, in several phases over the next few years. AIMS will provide the Committees the capability to obtain, retain, and review data being generated and maintained in electronic formats by organizations having business before them.

The initial phase of AIMS implementation is intended to afford the ACRS direct access to the integrated, computerized data bases now being developed by advanced reactor designers, to improve both the effectiveness and efficiency of ACRS reviews of designs being offered for certification under 10 CFR Part 52. Computerized data representing the safety-related elements of advanced reactor designs that can be accessed and displayed for ACRS review purposes includes:

- Two and three-dimensional plant schematic and physical models and plans;
- Design bases, safety analyses, and design parameters for safety-related systems, structures, and components; and
- The full text and graphics of the Standard Safety Analysis Reports, NRC staff Safety Evaluation Reports, and other documentation related to the certification of advanced reactor designs.

AIMS will also include the necessary interfaces with the advisory committee conference room display equipment, and with existing ACRS/ACNW high performance computing systems, to facilitate the direct display of computerized plant models, design data, SSAR text and graphics, and analysis results during ACRS and ACNW working group, subcommittee and full committee meetings.

The design and use of AIMS for support of advanced reactor reviews by the ACRS can be considered as a pilot for the development of similar capability for the NRC staff, since the Committee typically reviews the entire scope of an application for certification. As currently envisioned, AIMS will be integrated with existing and planned TWFN communications systems and computing resources. Most of the system's functionality and data will therefore be accessible for trial use and evaluation by elements of the NRC staff.

To be of greatest benefit to the ACRS in upcoming advanced reactor design reviews, especially those for the AP600 and SBWR, the first phase of AIMS development needs to be completed by May 1994. We are aware of several potential sources of supply for the database and software elements of the system, as well as a number of constraints imposed by the existing configurations and data structures of electronic plant modeling and engineering definition systems used by advanced reactor vendors.

To ensure the systematic and successful development of AIMS the following matters must be thoroughly addressed:

- Validation of our original needs assessment for AIMS;
- Refinement of the functional requirements and performance specifications for AIMS;
- Identification of salient technological and other constraints on system design (e.g., extent and type of computerized data available from advanced reactor vendors, selection of AIMS digital data format(s), capability to access and convert data maintained in several different digital formats, control and updating of data in AIMS databases);
- Evaluation and assessment of alternative design approaches and available choices for software, hardware, and systems integration services;
- Development of an AIMS implementation plan and schedule that incorporates the findings above.

September 17, 1993

Requested Action

We wish to proceed aggressively with the work needed to achieve the goals outlined above. We request that IRM provide the funding needed to immediately initiate work on a Task Order to be added to the present Technology Advancement Support Project (FIN L-2501) with Lawrence Livermore National Laboratory (LLNL).

In consultation with IRM/DCTS staff and with the support of the Technology Advancement Board, ACRS staff is now developing and refining the Task Order for AIMS support by LLNL. It will be submitted under separate cover. The Task Order will describe in detail the LLNL technical support needed to assure completion of the activities outlined above during the next few months. At the completion of this task, there should be information on system design requirements, schedules, costs, constraints, and other relevant matters sufficient to permit IRM and ACRS/ACNW to jointly determine the best manner in which to proceed with AIMS implementation.

Our initial estimate of the cost of LLNL support to achieve the objectives outlined in the current version of the Task Order is \$135,000. We request IRM funding for the work associated with this initial task, and support for the implementation activities that will follow its completion.

My staff and I are available to discuss these matters with you further and in greater detail, as required.



John T. Larkins
Executive Director, ACRS

cc: J. Ernest Wilkins, Chairman, ACRS
Dade Moeller, Chairman, ACNW
Pamela G. Kruzic, Director, IRM/DCTS

Gerald F. Cranford

4

September 17, 1993

bcc: ACRS/ACNW Members
J. Scarborough, OCM/KR
J. Guttman, OCM/FR
R. Savio
M. Lee
S. Duraiswamy
R. Major
M. MacWilliams
M. Stella
N. Thompson
S. Mays
I. Kirk, IRM