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April 2, 1970

ACRS Members

REPORT OF DRD&T MEETING WITH WATER REACTOR VENDORS TO DISCUSS THE WATER REACTOR SAFETY RESEARCH PROGRAM, WASHINGTON, D. C., MARCH 24, 1970.

A copy of notes taken during this meeting in Washington, D. C., is attached for your information.

J. C. Rodgers,
Staff Assistant

Copies
ACRS Members with attachment
M. C. Gaske with attachment

Attachment
Minutes of DRD&T Meeting, 3/24/70

ACRS Job 429 Box 6 Shelf 11916
Correspondence 4/70

ACRS

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DRD&T MEETING WITH WATER REACTOR VENDORS
Washington, D. C., March 24, 1970

DRD&T MEETING

Summary

The mood of the meeting was set by the statement made by Pressesky, RDT, that the AEC is scaling down its financial support of water reactor R&D programs.

Discussion of the five R&D programs (containment spray system, fuel failure propagation, blowdown heat transfer, emergency cooling heat transfer, (FLECHT), and hydrogen generation) did not lead to a request by anyone for new additions to the programs. The vendors, RDT, Regulatory Staff, and INC are to have discussions on the PBF program, including the means of obtaining pre-irradiated fuel for experiments in the PBF and on the need for and feasability of performing blowdown tests to verify the heat transfer characteristics of the core.

RDT plans to phase out CSE in FY70 and scale down spray technology in FY71, to shut down INC at the end of FY70, to continue the FLECHT tests, in the present program to completion, and to not participate in R&D of hydrogen generation.

Future discussions between AEC and vendors on the R&D program might include reactor boundary integrity and blowdown forces. It was suggested that upper management of utilities and the vendors should be involved when discussions require comment on fiscal matters.

Attendees

ACRS

H. Etherington
S. Hanauer
J. Rodgers, ACRS Staff

REG

C. K. Beck*

RDT

F. J. Davis
E. Klug
A. J. Pressesky
T. G. Schleiter

B&W

B. W. Bingham
W. S. Little
M. F. Saukovich
D. [illegible]

Westinghouse

DRL

B. Grimes
F. Schroeder
C. Moon

DRS

E. G. Case*
J. McEwen
M. Rosen

WRSPO

G. O. Bright
W. H. Burgus
O. R. Meyer
L. D. Schlenker
S. H. Spano

GE

D. H. Immoff
J. L. Murray
R. T. Pennington

Westinghouse

A. R. Collier
J. D. McAdoo
K. A. Sindt

C-E

W. E. Abbott
M. F. Valerino

*Part Time

Pressesky, RDT, set the mood of the meeting by noting that the Bureau of the Budget has been forcing the AEC to reduce its monetary investment in the R&D programs associated with water reactors. He added that RDT wholeheartedly agrees that the AEC should reduce its budget in such programs.

Westinghouse asked if the industry comments on the AEC's Water Reactor Safety Program (WRSP) plan have been considered by RDT. RDT said yes.

Westinghouse asked what the rationale was for the selection of the topics to be discussed at the meeting. RDT said that the topics were chosen to provide a spectrum of R&D programs which are in various stages of completion.

Combustion Engineering (CE) asked if the current WRSP plan addresses the questions raised by the ACRS and Regulatory Staff. RDT said that they believed they have been addressing such questions all along.

(1) Containment Spray System - RDT is programming down the R&D work on containment spray systems. RDT believes the work is almost completed.

(a) Budget changes

Spray technology program - FY70 $0.4M, FY71 $0.15M;
CSE-FY70 $1.0M, FY71 - nothing.

(b) Vendor Comments

Westinghouse sees no need for further R&D work in spray technology. They find compatibility between their models and the R&D results. They hope the Regulatory Staff will become more confident in the results of the R&D program, e.g., the R&D experimenters reported that containment sprays can reduce the quantity of methyl iodide from the containment atmosphere by a factor of 50, but the Staff is only crediting the spray system with the capability of reducing methyl iodide from the atmosphere by a factor of 8.

CE-asked the Staff to give the rationale for their position, i.e., Staff provide some correlation between Regulatory requirements and the R&D experimental results.

The Staff asked why they needed to provide a rationale for their position. The Diablo Canyon public hearing record for example, contains adequate information about the approach used by the Staff.

B&W-needs to evaluate the R&D information before they comment further on the program.

GE-had no specific comment.

Conclusion-RDT concluded that the vendors are satisfied that the technical works completed to date is adequate and, therefore, RDT plans to discontinue involvement in R&D of containment spray systems since no new programs have been identified as being necessary.

(2) Fuel Failure Propagation - Pressesky stated that RDT plans to discontinue operation of the Capsule Driver Core (CDC) facility at the end of FY70. (Pressesky seemed to be "soliciting" the vendors to help provide financial support for CDC operations in FY71. He felt that, if CDC operations could be maintained until FY72, the AEC could support CDC operations in FY72.) As a result of shutting down CDC, there will be a gap of at least a year between the CDC shutdown and the start-up of the Power Burst Facility (PBF). Dr. Hanauer asked if the CDC personnel will be kept on the payroll. Pressesky replied that the major portion of the cost of the facility is for salaries. Therefore, some people will have to be released. The budgetary shortage to support CDC is $0.4M.

(a) Vendor Comments

GE-believes that propagation of fuel failure cannot be properly studied at the CDC facility. GE would, however, like to have experiments performed with plutonium oxide fuels at the CDC facility.

Westinghouse-does not believe more experiments need to be performed at CDC. They would rather see the PBF start operations as soon as possible. Westinghouse suggested an agreement should be reached by all interested parties as to the structure of the experimental program at PBF, i.e., the most needed information to answer safety related questions regarding fuel failure propagation should be sought. NOTE: All vendors present (GE, W, B&W, & CE) agreed to supply manpower to assess the PBF program and suggest ways of obtaining information on the most urgent questions.

CE-agreed with Westinghouse.

B&W-had no comment on CDC.

Idaho Nuclear Corporation (INC) stated they will ask the vendors to comment, in the near future, on the PBF program. (The program is to be released in June/July 1970, with industry comments factored in.)

DRL asked what the long range plan is to obtain fuel which has been pre-irradiated before use in PBF experiments. Presesaky has not identified yet what should be done. It was suggested this is an area where the utilities might well become involved. B&W asked if there would be any licensing hold-ups if the utilities placed special fuel into their reactors for later use in PBF (Enrichments of over 10% are being considered for PBF tests.)

(b) Conclusion-RDT concluded that the vendors present at the meeting will provide manpower input to study the PBF program along with the Regulatory Staff.

The WRSP office is to coordinate this effort. An investigation should be made to determine ways of obtaining pre-irradiated fuel for PBF tests.

(3) Blowdown Heat Transfer - RDT reported that the AEC has not contracted much R&D work in FY70 for studies of blowdown heat transfer. Budget allowances are modest for both FY70 and FY71.

(a) Vendor Comments

Westinghouse stated that they were satisfied with the approach they use to analyze the heat transfer in the core during blowdown conditions. They believe the only value of experimentation is to demonstrate to the Staff the degree of conservatism used by the vendor.

GE-believes the experiments would provide confirmatory support to help satisfy the Staff that conservatism is already incorporated in the vendor's design.

B&W-would like the experiments, programmed by the AEC, to be completed.

Dr. Hanauer asked the vendors if they would propose higher power levels and power densities for their reactors if the experiments demonstrated that a large margin of conservatism existed in current designs. Some vendors indicated such a proposal might be entertained by them.

There was a discussion of the tests which might be performed and of the facility requirements needed to perform the tests. The major issue raised was associated with the scaling of the data from a small test facility up to an actual commercial reactor.

(b) Conclusion-The vendors, Regulatory Staff, RDT, and INC agreed to have their heat transfer experts meet to review the needs for performing blowdown tests and to determine if the available facilities are adequate for the task. RDT stated that the AEC financial support would be minimal. GE noted that their needs are different from the PWR vendors.

(4) Emergency Cooling Heat Transfer(FLECHT) - RDT reported that the AEC plans to complete the current FLECHT program during FY71. There are a limited number of test runs left to complete. When these are completed, the program will be terminated unless a new program is proposed.

(a) Vendor Comments

GE-is satisfied with the results but would like to see more two-phase tests.

CE-does not believe there is a need for a new FLECHT program.

B&W-would like the test data made available more quickly than has been the case.

Westinghouse-stated they have been performing their own multirod tests. Dr. Hanauer asked them if they have performed tests where there would be no benefits from annealing of the clad material. Westinghouse replied that a broad spectrum of test runs have been performed and the results have been reported in WCAP 7396L.

(b) Conclusion-RDT concluded that the FLECHT tests will continue to completion of the present program. No further action has been requested by the vendors.

(5) Hydrogen Generation - RDT stated they are not providing R&D support to study the generation of hydrogen except in a small way through spray technology.

(a) Comments

GE-stated that they would like the AEC to come to a "policy" decision on this subject. GE suggested that hydrogen burning in a containment may not be unacceptable. They added that utilities are wondering why they cannot vent the containment atmosphere following a LOCA when the plant is in a "rural"

Dr. Hanauer noted that the ACRS is concerned about hydrogen generation and is actively working on the issue.

McEwen, DRS, stated that efforts are being made to coordinate data on hydrogen behavior. He hopes to have the data assembled within a month.

(b) Conclusion-RDT concluded that there is no AEC supported R&D program required.

Future Meetings-There did not appear to be an enthusiastic support for future meetings. GE suggested that the working groups on the PBF and blowdown subjects should be used as a key as to the usefulness of future meetings and then topics be submitted to RDT by vendors.

Westinghouse thought it appropriate for utilities to become involved, but was not sure of the means to get them into the discussion. CE suggested the AIF be the organization through which discussions be held.

B&W suggested that related R&D program which may be in "jeopardy" could be topics for discussion. RDT thought that blowdown forces on core internals might be discussed at the next meeting.

Pressesky reviewed the various means by which the AEC and industry might be able to cooperate in the R&D programs e.g., industry use AEC owned facilities, AEC coordinate various phases of R&D performed by industry. Westinghouse raised the question of the method which would be used to assure a fair share of the load was carried by each industrial organization. (GE thinks they are already carrying their share.)

Dr. Hanauer noted that non-profit organizations are now used by other industrial groups, e.g., UL.

It was suggested that upper management become involved if fiscal matters are discussed.

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