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Oct 20, 1961

Brig. Gen. A. W. Betts, Director
Division of Military Application
U. S. Atomic Energy Commission
Washington 25, D.C.

Thru: K. F. Hertford, Mgr., AEC-ALO

Thru: Charles C. Campbell, Mgr., AEC-ALO

Re: Safety of Nuclear Power Programs

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
1 st Review Date: 10/15/97	Determination (Circle Numbers):
Authority: E. C. B. ADD	Classification Retained: UNCL
Name: W. H. LAWRENCE	Classification Changed to:
2 nd Review Date: 10/22/97	Contains the DOE Classified Information:
Authority: ADD	1. Coordinate With:
Name: W. Lopez	5. Contains UCAI?
	6. Comments: Unclassified

- References:
1. Memo, Frank K. Pittman to Brig. Gen. A. W. Betts, dtd 5/23/61, subject, The Sandia Corporation as an Integrated Contractor for Nuclear Safety Analysis and Testing in the Nuclear Power Programs, Symbol: RD:DIR:JAC
 2. Memo, Brig. Gen. A. W. Betts to K. F. Hertford, dtd 6/9/61, subject, Reactor Safety Program, Symbol: MAR:CLT
 3. Memo, Paul W. Ager, ALO, to S. P. Schwartz, SC dtd 6/19/61, subject, Reactor Safety Program, Symbol: PW:SAU

Having carefully deliberated over the contents of references 1 and 2, supplemented by discussions with Drs. Pittman and Hembree, we have decided that we would like to undertake that part of the total effort outlined by Dr. Pittman that deals with the evaluation of safety questions arising from the use of nuclear auxiliary power in the aerospace program. Dr. Hembree has indicated that the progress of the urgently needed SNAP program is being slowed to a standstill until it can be clearly demonstrated that both isotopic and reactor type power supplies do not constitute a safety or health hazard under all conceivable operating or mishap conditions.

We believe that we are in a position to make a significant contribution in this area of analysis by virtue of experience gained and competence developed in the weapons development and test program. It appears that the technology required in the accomplishment of this task is very closely related to our continuing weapons work, especially to our current development activity basis to an extra-atmosphere and deep space nuclear testing

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CLASSIFICATION CHANGED TO: U	AUTHORITY: W. H. Lawrence
PERSON CHANGING MARKING & DATE: Emelda Selph 11/3/97	RECORD ID: 985N0398
PERSON VERIFYING MARKING & DATE: W. LAWRENCE 11/6/97	DATED: 10/23/97

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capability. The SNAP safety work is also closely related to our Project SAND (Sampling of Aerospace Nuclear Debris) for which we are seeking support from the AEC's Division of Biology and Medicine. In fact, if Project SAND cannot be supported as such, it would be necessary to accomplish much of that program as a part of the aerospace nuclear safety program since some of the objectives of the latter require sampling at high altitudes by means of the same techniques needed for SAND. Thus it appears that the SNAP nuclear safety program and our normal weapons development and test activity would result in complimentary interaction and that the incorporation of the former in our total task would help to promote vigor and stability in the laboratory, thereby strengthening our long term weapons capability.

We are starting immediately to prepare a Scope of Work statement setting forth the details, as we now see them, of the program required to obtain the answers sought by the DRD. This statement will include estimates of manpower, schedules, and cost, as well as an indication of how the overall task will make full use of the talents and experience of the Special Weapons Center at KAFB. It will probably take about one month to prepare this proposed Scope of Work, but we can say at this time that we believe manpower-wise we can accomplish the task within our present authorized personnel levels by reevaluation of current activities and rearrangement of staff. We could therefore start work immediately upon authorization to do so.

We realize that the above proposal is in response to only a part of the safety problem outlined in reference 1 and as supplemented by our later discussions with Drs. Pittman and Hembree, so a commentary is in order in regard to (1) nuclear propulsion systems and (2) stationary power reactors.

In the field of nuclear propulsion systems for marine, aircraft, and missile application, we understand that the safety aspects are being handled rather intensively by special groups set up for that sole purpose within the individual project organizations and that as a result the need for another disinterested review arrangement is at least of lesser urgency at this time than in areas such as SNAP. We therefore would not at this time want to undertake work in this area.

In the field of stationary power reactors we concur with DRD that there is a definite need for an objective review of design requirements as measured against potential phenomenology. If true value is to be gained from such a review the undertaking agency should have no reservations as to the degree of involvement and level of effort it is willing to assign to the task. At the present time we are standing on the brink of a major realignment of effort stemming from the uncertainties of the full scale weapon test program. Depending upon decisions that are being generated now relative to test media (i.e.) subsurface, surface, atmosphere, extra-atmosphere, and deep space, gross changes in level of technical effort in a variety of areas can be impressed upon us. In such an atmosphere we believe it very unwise to undertake work relative to the safety of stationary reactors.

Signed for and in the absence
of S. P. Schwartz, President
s/R. W. Henderson

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