October 24, 1985

COMMENTS OF OHIO CITIZENS FOR RESPONSIBLE ENERGY, INC. ON NUREG-0956, "REASSESSMENT OF THE TECHNICAL BASES FOR ESTIMATING SOURCE TERMS"

The NRC has recently released NUREG-0956, entitled "Reassessment of the Technical Bases for Estimating Source Terms," for public comment. Ohio Citizens for Responsible Energy, Inc. ("OCRE") hereby submits its comments, pursuant to the notice in 50 Fed. Reg. 31937, (August 7, 1985).

OCRE believes that NUREG-0956 correctly presents the state of technology on severe accident source term evaluation; i.e., highly uncertain.

For example, NUREG-0956 contains many statements revealing the immaturity of this technology. It is frequently emphasized that there are large uncertainties associated with source term calculations (pp. 4-45 - 4-46, 8-1 - 8-2). Areas in which uncertainties persist are natural circulation in the reactor vessel, core melt progression and hydrogen generation, in-vessel fission product release from fuel and aerosol generation, retention and revaporization of fission products in the reactor coolant system, fission product release and aerosol generation from core-concrete interaction, scrubbing efficiency of suppression pools and ice compartments, and containment pressure loads and failure modes. P. 3-38.

These are major areas encompassing almost all facets of severe accident progression. The fact that uncertainties remain in so many areas reveals that this technology is not suitable for application to the NRC's regulatory purposes at this time.

In addition, source terms are found to plant-specific and

accident sequence specific (p. 4-1), as well as strongly dependent on details of plant design and construction (p. 8-4). It is also cautioned that the analytical procedures are complex and involve several scientific disciplines, and they must be subject to a quality assurance program because "there is a significant chance of making mistakes." NUREG-0956 at 8-2, 8-3.

The NUREG also correctly reports the findings of the American Physical Society ("APS"), with which OCRE agrees.

APS noted the uncertainties associated with source term predictions and specifically expressed concern on the lack of experimental validation of computational models and the insufficient evaluation of accident sequences and phenomena which could result in increased source terms. APS concluded that "(i)t is impossible to make the sweeping generalization that the calculated source term for any accident sequence involving any reactor plant would always be a small fraction of the fission product inventory at reactor shutdown" and "it is not possible to derive factors by which the source term for all radionuclides and all reactors can be changed from the values reported in the Reactor Safety Study." APS, Radionuclide Release from Severe Accidents at Nuclear Power Plants, Conclusions and Recommendations and Executive Summary.

No doubt in recognition of these uncertainties and criticisms, the Foreword to NUREG-0956 states:

> The next step after analysis of comments [on NUREG-0956] will be to complete a study of the applications of these models to the risk appraisal of five reference plants. That work, which goes beyond the science and engineering of NUREG-0956, will, when published, also be issued for broad comment and review. Only then will we be able to use this new technology in a review of regulatory practice.

NUREG-0956 at xiii, emphasis added.

However, in spite of these caveats, Recommendation 1 (p. 8-6) states that the new methodologies should be utilized to reevaluate regulatory practices before the completion of research which would remove these substantial uncertainties. This is a total nonsequitur, and it reveals that the source term issue really involves a political decision which has already been made.

The fait accompli nature of this issue (regardless of what further research may show) is demonstrated by various NRC policy documents and statements. See e.g., the Regulatory Agenda, wherein proposed changes to emergency planning and reactor siting regulations are on the books and await only an official go-ahead. NUREG-0936, Vol. 3, No. 4, pp. 79, 109. The Policy and Planning Guidance portion of the NRC's Annual Report has emphasized the source term issue and its regulatory implications since 1982. The NRC Staff has even "put out a plea recently for industry representatives to tell NRC what regulations they want changed in response to source term research." Inside NRC, Nov. 12, 1984, p. 14.

It would behoove the NRC to recall that, under the Administrative Procedure Act, changes to regulations must be supported by the rulemaking record. 5 USC 553, 706. Nothing in NUREG-0956 supports any relaxation in the NRC's regulations, given the uncertainties and lack of experimental validation of this technology. Regulatory changes made before the completion of confirmatory research would clearly be held arbitrary and capricious by a reviewing court. Since the NRC certainly wants to conform its practices to the law, the NRC should agree with

OCRE that no regulatory changes should be made before the completion of confirmatory research.

Respectfully submitted,

Susan L. Hiatt

Susan L. Hiatt
OCRE Representative
8275 Munson Rd.
Mentor, OH 44060
(216)255-3158