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GENERAL ATOMICS

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(2)

Subject: General Atomics Comments on NUREG-3-2005

General Atomics (GA) appreciated the discussions with the NRC staff at the public workshop on Regulatory Structure for New Plant Licensing, March 14-16, 2005. The items of greatest concern to GA involve emergency planning and containment functional requirements. These concerns are summarized below and additional detail and other comments are provided in subsequent pages.

The framework of the regulatory structure should provide a high level criteria that would allow the emergency planning requirements to be simplified for advanced reactor designs that possess a high level of safety. The framework is the ideal forum to take a look at emergency planning and to determine what requirements an advanced reactor would have to meet satisfy for reduction of the emergency planning zone down to the site boundary.

The NRC staff has prepared four options to address non-LWR containment functional requirements. GA strongly recommends option 1 which states that the containment must adequately reduce radionuclide releases to the environs to meet the onsite and offsite radionuclide dose acceptance criteria for the events selected for the event categories. The other options place more stringent and unnecessary requirements on advanced reactors.

Should you have any questions on this letter or this subject, please feel free to contact me at 858-455-2552, or by e-mail at arkal.shenoy@gat.com.

Sincerely,

A S Shenoy

Arkal S. Shenoy
Director, MHR Programs

SISP Review Complete

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COMMENTS ON NUREG-3-2005

Specific comments are provided below in the five topical areas that the NRC staff presented at the March 14-16, 2005 workshop.

1. Safety Philosophy (Level of Safety)

In the framework, the staff proposes a safety philosophy directly tied to the Commission's 1986 Safety Goal Policy by achieving the level of safety defined by the Safety Goal Policy Quantitative Health Objectives. GA strongly supports this approach and believes doing so will meet the expectation of enhanced margins of safety for advanced reactors.

2. Protective Strategies

The protective strategies of the proposed licensing framework are physical protection, limit initiating event frequency, protective systems, barrier integrity, and accident management. In the workshop, it was stated that the NRC staff has developed a conceptual approach for assessing changes to emergency preparedness which ensures a baseline emergency preparedness capability, regardless of reactor technology or design, and has the intention to expand this baseline where necessary to accommodate the need for more rapid implementation. This approach is not explained in the draft NUREG and does not address the most important emergency planning issue: What criteria would allow an applicant to reduce the emergency planning zone (EPZ) to the site boundary or exclusion area boundary (EAB). One of GA's advanced reactor design objectives has been to eliminate the need for off-site evacuation drills by reducing the EPZ to the site boundary. This objective has been requested by potential utility operators. If the reactor design is safe enough to not require off-site evacuation drills, then the public perception of the design's safety may be improved. In other words, a plant that needs evacuation drills might be perceived by some in the public to be dangerous.

The presentation by Westinghouse on the IRIS design agrees with GA's approach to emergency preparedness. The goal is an advanced reactor design that is as safe as and requires no emergency planning measures like most other industrial facilites.

3. Quantitative Risk Objectives and Criteria, Design, Construction, and Operational Objectives and Criteria

The objectives of the framework are expected to require that a living PRA be maintained. Having adequate margin to account for uncertainties should minimize the potential for an impact of a living PRA in changing the design basis. However, GA is still concerned about the resource requirements in maintaining a living PRA and suggest that a frequency requirement for updates of the PRA maybe more appropriate. An update frequency of once every five years would seem to be reasonable.

While GA has at times expressed risk on a per plant basis, for the MHTGR assessment of the mid 1980s we chose to evaluate the risk for the site since this appeared to be a more direct indicator of health risk to the surrounding public. We continue to feel that it would be more reasonable to express integrated risk on a per site basis. This approach appears to be consistent with some of the comments from the ACRS even though it maybe particularly controversial at sites with multiple LWRs already present.

4. Treatment of Uncertainties and Defense-in-Depth

The containment is presented as part of the defense-in-depth that is the last barrier to radionuclide release and is present to account for uncertainties, especially the uncertainties due to a lack of knowledge. The NRC staff also presented four options for containment functional requirements and how they might be applied to the MHTGR. GA strongly endorses the first option which merely requires that the containment be adequate to reduce radionuclide release to meet the dose acceptance criteria. Options 2, 3 and 4 suggest that additional credible events having a potential for high consequence source terms would be selected. This selection process raises concern about the goal of the framework to provide a more predictable set of regulatory requirements that do not have to be arrived at on a case-by-case basis. This selection process would also appear to require advanced reactors to accommodate lower frequency events than LWRs.

5. Process for Defining Scope of Requirements (and General Implementation Issues)

One concern GA has had with the development of requirements which this framework will hopefully address is the requirements for advanced reactors be equivalent to those for LWRs. In this regard, the proposal to apply the framework to a completed reactor design such as the ALWR is supported by GA. It would be GA's expectation that applying the framework to the AP-1000 should result in essentially the same set of regulatory requirements. This would provide assurance that the framework is fair, balanced and does not result in ratcheting of safety requirements.

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