

# memorandum

DATE: **OCT 03 1996**  
REPLY TO: LAAMFO:9CS-004  
ATTN OF:  
SUBJECT: Request for Interpretive Guidance on Addressing Worker Safety Issues in the Arena of Unreviewed Safety Questions (USQs)

TO: Richard Black, EH-31, HQ

On October, 2, 1996, Christopher Steele of the Los Alamos Area Office requested information from the Office of Nuclear Safety Policy and Standards (Richard Englehart) relative to the issue of USQs as they relate to worker safety. The verbal response from EH on this issue was appreciated and closely matched the independent LAAO interpretation on this issue.

This memorandum constitutes a request for formal interpretive guidance on this issue. Formal guidance on this issue will aid LAAO in efforts to formally address this concern. The specific issue on which LAAO is seeking guidance is: Are worker safety issues categorically excluded from the arena of USQs? A specific hypothetical example will serve to highlight important issues to consider in your guidance on the subject issue, as follows:

Assume, for the sake of discussion, that a new test or experiment in a nuclear facility is being proposed. Further, assume that this proposed new experiment could involve energetic dispersal of  $^{239}\text{Pu}$  into the laboratory of occurrence by breach of the glove box walls in which the experiment is to be conducted. The best estimate doses due to inhalation of respirable particles (given the potential uncertainties in the health physics analysis) in this hypothetical accident are in the range (200 rem CEDE, 2000 rem CEDE). Worker fatality or serious injury is also a credible potential due to high speed, Pu-contaminated fragment impact with workers. Assume that the current, approved, FSAR for the facility is silent on the issue of worker safety. There is no potential for offsite dose effects or environmental effects as the accident is compartmentalized to the laboratory of occurrence.

In the context of the above question and hypothetical scenario, is this an USQ?

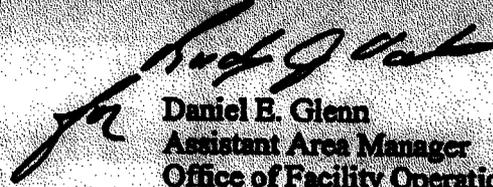
To add further clarity to the situation, now assume that the facility has performed proactive hazards and safety analysis on the new proposed experiment to identify threats to the workers. Further, assume that because the facility is safety conscious, that they have proposed and implemented several new, well designed barriers to control the potential for consequences to workers. However, there has been no formal DOE review and acceptance of these barriers.

Richard Black

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With these formally unapproved, but well designed barriers in place, does this proposed experiment constitute an USQ?

Your formal response to this issue would be appreciated.



Daniel E. Glenn  
Assistant Area Manager  
Office of Facility Operations

cc:  
Richard Englehart, RH-31, HQ  
C. Steele, LAAMFO, LAAO

# memorandum

DATE: October 21, 1996

REPLY TO  
ATTN OF:

Office of Nuclear Safety Policy and Standards: R. Englehart:903-3718

SUBJECT:

Request for Interpretation on Addressing Worker Safety Issues Under the Unreviewed Safety Question (USQ) Order

TO:

Daniel B. Glenn, LAAO

Your memorandum of October 3, 1996 presented a hypothetical case wherein a new test or experiment was proposed that introduced a new accident scenario into a nuclear facility with serious potential consequences to workers, but no consequence to the public. The existing nuclear safety authorization basis documents do not address worker safety. You asked the question, is this situation an Unreviewed Safety Question under Order 5480.21? The implied question is, are USQs only associated with potential accidents that affect only the public, or are they also associated with potential accidents that only affect workers?

Your memorandum then extended the hypothetical case to where the contractor had performed a hazards and safety analysis on the new test or experiment and had proposed and implemented safety features for worker protection for the new accident scenario without formal DOE review and approval. You asked, with this further developed hypothetical, is this situation an Unreviewed Safety Question under Order 5480.21?

The purpose of the USQ Order is to define the level of approval required for proposed changes to a nuclear facility. The intent is to allow a contractor to make changes that do not adversely affect or extend the safety basis that DOE has approved for the facility. Conversely, it also is to insure that DOE has the approval authority for changes that introduce new hazards and higher risks (to the public as well as to workers) than it has already approved.

DOE Order 5480.21, paragraph 10.c.(2) states that a situation involves a USQ if, "The possibility for an accident or malfunction of a different type than any evaluated previously in the facility safety analysis could be created." Therefore, without reference to who the potentially affected party(ies) may be, this situation would constitute a USQ if the existing authorization basis documents do not consider this type of accident and the appropriate controls to prevent or mitigate it. If this type of accident is considered in the existing authorization basis documents, then paragraph 10.c.(1) would come into play, wherein a situation involves a USQ if the probability or consequences of an accident previously evaluated could be increased. In this case, consequences can be judged based on amount of release, worker impact, or public impact. These comments on the hypothetical example you posed illustrate that USQs are focused on potential accident attributes and the facility safety basis, not on who the affected party may be.

In the hypothetical case you described, the contractor should have subjected the proposed new test or experiment to the USQ process. Properly done, the contractor would have recognized that a positive USQ determination was appropriate. He/she then would have considered safety features to the design and would have submitted the proposed package (new test or experiment with safety features design) to DOE for approval before proceeding with facility modifications. Having neglected that step to the point of actually having built the test or experiment apparatus with safety features included, it is still incumbent on the contractor to get DOE approval before operating the test or experiment. The USQ criteria described above, when applied to the fait accompli situation, still indicate that a positive USQ situation exists for the hypothetical case you outlined.



Richard M. Stark, Deputy Director  
Office of Nuclear Safety Policy  
and Standards