



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

MEMORANDUM FOR: Guy H. Cunningham, Executive Legal Director  
FROM: Harold R. Denton, Director  
Office of Nuclear Reactor Regulation,  
SUBJECT: COMMENTS ON PROPOSED FINAL SHOLLY RULE ON  
SIGNIFICANT HAZARDS CONSIDERATIONS

Comments concerning your November 30, 1983 version of the proposed final regulations are contained in the enclosure. The impact of the interim Sholly regulations, particularly with the results achieved to date, should be brought to the attention of the Commissioners when they are considering the final Sholly regulations.

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated  
*John*  
Contact:  
J. Thoma, NRR  
49-27356

8604160185 860327  
PDR PR  
2 45FR20491 PDR

1. IMPACT

The interim Sholly regulations and the proposed final Sholly regulations require a significant amount of effort to implement. The attached memorandum\* from Dominic C. DiIanni provides an estimate of the costs of implementing the present interim Sholly regulations. He estimates an annual cost of 18.6 professional staff years and a publication cost of \$187,800 for pre-noticing amendment requests having no significant hazards considerations.

*Update monthly reports*  
As of August 22, 1984, the results of this activity are as follows: a total of 1440 Sholly notices have been issued. Public comments have been received thirteen times (involving five amendment requests) and sixteen requests for hearings have been received (involving nine amendment requests). Six amendments have been issued utilizing the immediate effectiveness provisions of the regulation in that a hearing was requested and a final no significant hazards consideration was made. This data indicates that less than 1% of this effort to involve the public actually resulted in public participation.

One could reasonably question whether or not Congress intended this amount of resource expenditure to implement the Sholly regulations, particularly with the results achieved to date. This impact should be brought to the attention of the Commissioners when considering the final Sholly regulations.

2. Definition of Emergency

*add (Newspaper) less than 2 weeks - reasonable time*  
Either expand the definition of an emergency in the regulation or provide for an extremely short public notification period (much less than the two weeks presently in the regulations) for selected "exigent circumstances" to minimize the total impact of a purely administrative delay. The proposed final rule states that all circumstances classified as "exigencies" allow a minimum of a two week public comment period. However, there are practical situations involving no significant hazards considerations which might otherwise be considered an exigency but which must be acted upon with the same urgency as an emergency situation. These circumstances include amendments involving no significant hazards considerations which if not issued promptly would extend a shutdown, extend a derating condition, or would require a shutdown plant to take certain actions which are impractical under the specific plant conditions.

The preferred solution is to expand the definition of an emergency situation to include these situations. It has been the staff policy since August 17, 1983 to include events involving NSHC which extend a shutdown under the definition of an emergency.

\*With respect to the DiIanni proposal to eliminate noticing, this was responded to by OELD memorandum (Dorian to Lainas dated August 20, 1984) which indicated that this noticing procedure was required by public law.

start-up included  
10% no difference between shutdown

Several public comments were received on this same subject. In response to these public comments, page 49 of the proposed final Sholly regulations states that nothing in legislative history indicates that the Commission should take other factors into consideration such as shutdown plants, higher levels of power generation, or economic injury when considering an emergency situation. We disagree with this statement. The present definition of an emergency situation is one in which immediate action is necessary to prevent the shutdown or derating of an operating plant. Preventing shutdown and preventing derating is very strongly connected with economic injury, allowing higher levels of power generation, and allowing start-up. Therefore, expanding the definition of an "emergency situation" to include these circumstances is consistent with the law and legislative history.

3. Definition of Significant *76*

A definition of "significant" would be useful in the Sholly regulations. For example, "significant reduction in margins" used in the criteria for determining significant hazards considerations, does this mean a reduction in margin between a code allowable value and an actual safety limit, or any reduction at all. One could reasonably argue that any change which results in a value still contained within code allowable values (or SRP values) is not "significant" and changes in this area simply allow for design flexibility. We realize the problem with formal definitions in that they restrict interpretation of the regulations, but some help in this area is needed. Perhaps instead of a formal definition, an example of a NSHC could be provided which involves a reduction in safety margins.

In addition, we and the Commission have been having some difficulty interpreting the criteria for making determinations on significant hazards. The Commission had indicated other kinds of examples such as how extensive is the review effort which might be considered in making these determinations. Currently, we have no good proposal to make to add to the standards.

4. State Consultation

- a. Paragraph 50.91(b)(2) on page 91 of the proposed final Sholly regulations states that the staff will notify the state of a NSHC determination at the same time it sends a copy of the notice to the Federal Register for publication. This places an unnecessary administrative burden on the staff. Wording which is more appropriate and follows the present practice would be "The Commission will advise the State of its proposed determination about no significant hazards considerations normally by sending it a copy of the FEDERAL REGISTER notice."
- b. In Paragraph 50.91(b)(3) on page 92 of the proposed final Sholly regulations), the sentence "nonetheless, to ensure that the State is aware of the application, before it issues the amendment, it will telephone that official" should be modified. The call serves no purpose for amendments

Keep as is

76

which have been noticed for 30 days and no request for a hearing has been received and a copy of the amendment has been sent to the state per the regulations. However, for amendments noticed less than 30 days or for which a hearing is requested, the state telephone call should be made.

5. Use of Local Media

Experience to date indicates essentially no advantage in using local media over the Federal Register Notice. References to using the local media should be eliminated from the regulation.

*No In Review*

6. Implementation

*- No*

The law requires a reasonable period for public comment on a proposed amendment involving no significant hazards considerations (NSHC). In the present implementation of this requirement, the amendment is described in far too much detail in the initial Federal Register Notice (FRN). If for any reason during the review the licensee modifies their submittal, a second FRN with its NSHC is required. In fact several amendments have even required a third FRN. This multiple issuance of FRNs on the same subject places an administrative burden on the staff. To circumvent the situation, many project managers are waiting until the review of an amendment request is almost complete before issuing the initial FRN with its NSHC. This reduces the administrative burden on the staff and satisfies the letter of the law but it does not notify the public that a review is in progress until well after the review is underway.

The law simply requires a reasonable comment period for proposed amendments involving NSHC. We are adding an administrative burden on ourselves if we very narrowly define a proposed amendment to be only the licensee submittals listed in the FRN. The original FRN should state that the NRC is reviewing a licensee submittal of a given date on a given topic and some changes may be necessary as a result of our review but the submittals received involve no significant hazards considerations based on the three criteria in the regulations. The public could be invited to provide comments or request a hearing based on the topic of the amendment request. Providing modifications made during the review do not change the NSHC determination, no other FRNs would be necessary until the amendment was issued. Any requests for a hearing would then utilize detailed information in the actual amendment to provide a basis for their contentions. This procedure would meet the requirements of the law and reduce the administrative burden on the staff. If you argue that a NSHC must be made on a detailed basis for a specific amendment request and not on the topic of the amendment in general, then NSHC must be considered merit oriented and can only be done after a detailed review.

7. Paragraph 50.91(a)(4) on page 89 has been modified from the interim rule to imply that an amendment involving a significant hazards consideration can be issued before a hearing if emergency action is warranted. The wording should be changed to reflect the proper course of action for significant hazards considerations. Specifically the wording "if emergency action is not warranted" should be removed from the last sentence.

O.K.

- Resolving

- TME - ~~steam generator~~

Requirements - check kind's

- replacement so  
change in parameters

- repair itself O.K.

} In statement  
but not  
necessity  
in  
samples



AA61-2

PDR

Oct. 10,  
1984

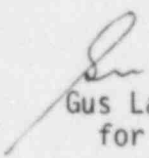
UNITED STATES  
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WASHINGTON, D. C. 20555

T. Donnan

NOTE TO: ~~William Olmstead, GELD~~  
FROM: G. Lainas, Assistant Director  
for Operating Reactors, DL  
SUBJECT: MEETING WITH E. CASE - SHOLLY

Consistent with our discussion on Tuesday, I have arranged a meeting with Ed Case for Friday at 2:30 pm, subject: Sholly comments.

Enclosed is a draft to be discussed at the meeting.

  
Gus Lainas, Assistant Director  
for Operating Reactors, DL

Enclosure:  
As stated

cc w/enclosure:  
E. Case  
D. Eisenhut

PKG  
Dupe



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*Package duplicate*

ENCLOSURE

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ENVIRONMENTAL CONSIDERATIONS REGARDING THE LICENSING OF  
RESEARCH REACTORS AND CRITICAL FACILITIES

Introduction

This discussion deals with research reactors and critical facilities which are designed to operate at low power levels, 2 MWt and lower, and are used primarily for basic research in neutron physics, neutron radiography, isotope production, experiments associated with nuclear engineering, training and as a part of a nuclear physics curriculum. Operation of such facilities will generally not exceed a 5-day week, 8-hour day, or about 2000 hours per year. Such reactors are located adjacent to technical service support facilities with convenient access for students and faculty.

Sited most frequently on the campuses of large universities, the reactors are usually housed in already existing structures, appropriately modified, or placed in new buildings that are designed and constructed to blend in with existing facilities. However, the environmental considerations discussed herein are not limited to those which are part of universities.

Facility

There are no exterior conduits, pipelines, electrical or mechanical structures or transmission lines attached to or adjacent to the facility other than for utility services, which are similar to those required in other similar facilities, specifically laboratories. Heat dissipation is generally accomplished by use of a cooling tower located on the roof of the building. These cooling towers typically are on the order of 10' x 10' x 10' and are comparable to cooling towers associated with the air-conditioning systems of large office buildings.

Make-up for the cooling system is readily available and usually obtained from the local water supply. Radioactive gaseous effluents are limited to Ar-41 and the release of radioactive liquid effluents can be carefully monitored and controlled. Liquid wastes are collected in storage tanks to allow for decay and monitoring prior to dilution and release to the sanitary sewer system. Solid radioactive wastes are packaged and shipped off-site for storage at NRC-approved sites. The transportation of such waste is done in accordance with existing NRC-DOT regulations in approved shipping containers.

Chemical and sanitary waste systems are similar to those existing at other similar laboratories and buildings.

### Environmental Effects of Site Preparation and Facility Construction

Construction of such facilities invariably occurs in areas that have already been disturbed by other building construction and, in some cases, solely within an already existing building. Therefore, construction would not be expected to have any significant effect on the terrain, vegetation, wildlife or nearby waters or aquatic life. The societal, economic and esthetic impacts of construction would be no greater than those associated with the construction of a large office building or similar research facility.

### Environmental Effects of Facility Operation

Release of thermal effluents from a reactor of less than 2 Mwt will not have a significant effect on the environment. This small amount of waste heat is generally rejected to the atmosphere by means of small cooling towers. Extensive drift and/or fog will not occur at this low power level.

Release of routine gaseous effluents can be limited to Ar-41, which is generated by neutron activation of air. Even this will be kept as low as practicable by using gases other than air for supporting experiments. Yearly doses to unrestricted areas will be at or below established guidelines in 10 CFR 20 limits. Routine releases of radioactive liquid effluents can be carefully monitored and controlled in a manner that will ensure compliance with current standards. Solid radioactive wastes will be shipped to an authorized disposal site in approved containers. These wastes should not require more than a few shipping containers a year.

Based on experience with other research reactors, specifically TRIGA reactors operating in the 1 to 2 Mwt range, the annual release of gaseous and liquid effluents to unrestricted areas should be less than 30 curies and 0.01 curies, respectively.

No release of potentially harmful chemical substances will occur during normal operation. Small amounts of chemicals and/or high-solid content water may be released from the facility through the sanitary sewer during periodic blowdown of the cooling tower or from laboratory experiments.

Other potential effects of the facility, such as esthetics, noise, societal or impact on local flora and fauna are expected to be too small to measure.

### Environmental Effects of Accidents

Accidents ranging from the failure of experiments up to the largest core damage and fission product release considered possible result in doses that are less than 10 CFR Part 20 guidelines and are considered negligible with respect to the environment.

### Unavoidable Effects of Facility Construction and Operation

The unavoidable effects of construction and operation involve the materials used in construction that cannot be recovered and the fissionable material used in the reactor. No adverse impact on the environment is expected from either of these unavoidable effects.

### Alternatives to Construction and Operation of the Facility

To accomplish the objectives associated with research reactors, there are no suitable alternatives. Some of these objectives are training of students in the operation of reactors, production of radioisotopes, and use of neutron and gamma ray beams to conduct experiments.

### Long-Term Effects of Facility Construction and Operation

The long-term effects of research facilities are considered to be beneficial as a result of the contribution to scientific knowledge and training. Because of the relatively small amount of capital resources involved and the small impact on the environment, very little irreversible and irretrievable commitment is associated with such facilities.

### Costs and Benefits of Facility Alternatives

The costs are on the order of several millions of dollars with very little environmental impact. The benefits include, but are not limited to, some combination of the following: conduct of activation analyses, conduct of neutron radiography, training of operating personnel and education of students. Some of these activities could be conducted using particle accelerators or radioactive sources which would be more costly and less efficient. There is no reasonable alternative to a nuclear research reactor for conducting this spectrum of activities.

### Conclusion

The staff concludes that there will be no significant environmental impact associated with the licensing of research reactors or critical facilities designed to operate at power levels of 2 MWt or lower and that no environmental impact statements are required to be written for the issuance of construction permits or operating licenses for such facilities.