Hubbard's Comments Given Dick Dudley on 7/25/00

DLPM Comment Analysis
(Insert all responses in Appendix 8)

Public Comment #1: At the decommissioning spent fuel pool risk public workshop held on July 15-16, 1999, David Lochbaum, of the Union of Concerned Scientists, stated, "It is difficult to figure out how this effort fits into the overall big picture of what the NRC is doing on decommissioning."

Response: The focus of the decommissioning spent fuel pool risk study was intentionally limited to address potential severe accidents associated only with spent fuel. An additional rulemaking effort, termed the regulatory improvement initiative, is planned by the NRC and will include a comprehensive look at all decommissioning regulations to determine if any additional changes are required. The overall picture of decommissioning issues will be addressed during this subsequent effort.

Public Comment #2: At the decommissioning spent fuel pool risk public workshop held on July 15-16, 1999, Ray Shadis stated, "Look at all of the activities that happen during decommissioning when developing regulations, not just a narrow view of the spent fuel pool."

Response: The focus of the decommissioning spent fuel pool risk study was intentionally limited to address potential severe accidents associated only with spent fuel. An additional rulemaking effort, termed the regulatory improvement initiative, is planned by the NRC and will include a comprehensive look at all decommissioning regulations to determine if any additional changes are required. All activities that take place at decommissioning sites will be considered during this subsequent effort.

Public Comment #3: At the decommissioning spent fuel pool risk public workshop held on July 15-16, 1999, Ray Shadis stated that he was confused on the way Part 50 is being applied in places where Part 72 might be more applicable.

Response: Although 10 CFR Part 50 was developed with the operating power reactors in mind, many of the requirements still apply to decommissioning power reactors. Decommissioning nuclear power plant licensees remain subject to their Part 50 license after they have permanently shut down and offloaded all fuel from the reactor to the spent fuel pool. The Part 50 license allows for safe storage of spent fuel in a spent fuel pool during operation and the staff believes that license remains adequate for spent fuel pool storage during decommissioning. 10 CFR Part 72 was developed with nuclear material (non-reactor) licensees in mind. The staff does not require a Part 50 licensee to obtain a Part 72 license for spent fuel storage in a spent fuel pool. When a licensee chooses to store spent fuel in an independent spent fuel storage installation, then the appropriate requirements of Part 72 will be applicable. All reactor decommissioning activities will remain

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under the Part 50 license until the decommissioning is completed and the license is formally terminated.

In SECY-99-168, dated June 30, 1999, the NRC staff proposed to the Commission that all NRC regulations under Title 10 be reviewed and modified as necessary to ensure proper applicability to decommissioning. At the direction of the Commission, the staff is currently assessing the regulations that may need modification to more effectively address decommissioning reactors.

Public Comment #4: The staff's spent fuel pool risk study only considered accidents scenarios that could lead to a spent fuel zirconium fire. Mr. Cameron questioned what other design basis accidents are considered for decommissioning nuclear power plants beyond those addressed in the study?

Response: There are typically no new or unique conditions associated with decommissioning that result in the creation or possibility of a different type of accident not previously bounded by the design basis accidents considered for the plant while it was operating. When a licensee updates its Final Safety Analysis Report for decommissioning, a suite of accidents are considered that have a reasonable potential to adversely impact public health and safety. The offsite consequences of these accidents are very small and should not require offsite emergency response. Examples of the types of accidents that are considered by the licensees include

- Materials handling event (non-fuel)
- Radioactive liquid waste releases
- Accidents from handling spent resin
- Fire
- Explosions
- External events
- Transportation accidents.

In addition to plant specific assessments of the postulated accidents, the staff has performed some generic evaluations. Consideration of environmental impacts of such events has been provided in the Final Generic Environmental Impact Statement on decommissioning of nuclear facilities, NUREG-0586. The staff has ~~also issued a draft report on postulated accidents for permanently shut-down reactors, NUREG-1716, that summarizes reasonably conceivable accidents and resulting consequences for decommissioning plants.~~ Title?

Title?

Public Comment #5: At the November 8, 1999, Commission meeting, Paul Blanch stated that SECY 99-168 doesn't cover all decommissioning issues. Specifically, he was concerned about the following issues:

(a) Although NRC and EPA disagree on site remediation criteria, Mr. Blanch stated that either level would provide reasonable assurance to the public of undue risk.

Response: Resolution of the disagreement between NRC and EPA on release criteria is not within the scope of the current rulemaking effort.

(b) What design basis accidents do we need to consider?

Response: Design basis accidents for decommissioning reactors are discussed in the response to Comment 4 above.

(c) Why does the NRC apply Part 50 (reactor) regulations to decommissioning reactors when the rules in Part 72 for storage of high-level waste are more clearly outlined? Part 50 regulations are not appropriate for long-term storage of high-level waste.

Response: The NRC believes that the 10 CFR Part 50 regulations applicable to decommissioning reactors are sufficient to assure public health and safety. Further assurance of the adequacy of these regulations will be provided in the near future as part of the decommissioning regulatory improvement effort in which a comprehensive review of all applicable NRC regulations will be undertaken. This issue is also addressed in the response to Comment 3 above.

(d) What is the applicability of 10 CFR Part 26 fitness-for-duty regulations to decommissioning reactors?

Response: Fitness-for-duty at decommissioning facilities is one of the issues that will be evaluated by the decommissioning regulatory improvement initiative.

(e) Quality assurance, emergency planning, fire protection, and application of codes and standards differs from site to site. Right now the decommissioning industry is being regulated by exemption to Part 50.

Response: The NRC is planning to propose new emergency planning rules for decommissioning reactors to eliminate the need for addressing the issue on a plant-specific basis by processing exemptions. A final regulatory guide on decommissioning reactor fire protection programs is expected to be issued in a few months. The remaining issues will be addressed by the decommissioning regualtory improvement initiative.

(f) The issue of onsite disposal of clean waste (rubblization) needs clarification.

Response: Development of NRC policy on rubblization is now ongoing in the Office of Nuclear Materials Safety and Safeguards.

(g) Design basis accidents need to be risk-informed and should address potential criticality.

Response: Design basis accidents are addressed in Comment 3 above. The issue of nuclear criticality is addressed in??????? ~~[TANYA PLEASE ADD REFERENCE]~~

Public Comment #6: Mr. David Stewart-Smith felt that decommissioning nuclear power plants should be evaluated for fires in the low level waste storage (LLW) area. Mr. Stewart-Smith states that large amounts of LLW could be stored in onsite LLW storage areas if offsite waste disposal sites are lost by a licensee "mid-stream" during the decommissioning process.

Response: The accident scenarios at decommissioning nuclear power plants that could result in the release of radioactive materials are too numerous and varied to attempt to prescriptively define. As part of the staff's broad-scope decommissioning regulatory improvement effort, the staff will ensure that regulations are in place that would reasonably preclude threats to the public health and safety from accidents that are significantly less severe than a spent fuel pool zirconium fire but perhaps more probable, such as the LLW fire described above. To address the specific concern of Mr. Stewart-Smith, 10 CFR 50.48 requires decommissioning nuclear power plant licensees to maintain a fire protection program to address fires which could cause the release or spread of radioactive materials which could result in a radiological hazard. In addition, nuclear power plants are also subject to the Commission's regulations for byproduct materials under 10 CFR Part 30. Specifically, 10 CFR 30.32(i) would require a licensee to maintain an appropriate EP program for radioactive materials stored onsite in quantities in excess of those specified in 10 CFR 30.72, "Schedule C - Quantities of Radioactive Material Requiring Consideration of the Need for an Emergency Plan for Responding to a Release." As part of the staff's recent effort on the integrated decommissioning rulemaking plan, the staff considered other less severe accidents with offsite consequences. The rulemaking plan recommends requiring licensees to perform reviews at their facilities to ensure that there are no other possible accidents that could result in offsite consequences exceeding EPA Protective Action Guidelines before reductions may be made in emergency preparedness and insurance requirements.

Public Comment #7: Ray Shadis stated his desire for an adjudicatory hearing and a prior NRC review/approval step at the onset of the decommissioning process.

Response: This issue of a hearing and NRC review and approval prior to decommissioning has been addressed previously by the Commission. The Commission addressed the issue in the statements of consideration for the rulemaking for decommissioning published July 29, 1996, in the *Federal Register* (61 FR39278) this way and continues to stand by its position: "...initial decommissioning activities (dismantlement) are not significantly different from routine operational activities such as replacement or refurbishment. Because of the framework of regulatory provisions embodied in the licensing basis for the facility, these activities do not present significant safety issues for which an NRC decision would be warranted." Therefore, NRC review and approval with hearing are not necessary.

Public Comment #8: Ray Shadis stated that since more radioactive materials are being handled [during decommissioning] than at an operating plant, and under conditions more likely to lead to inadvertent exposures, why are licenses left without the supervision of resident inspectors, or at least radiation protection personnel?

Response: During operation of a reactor, radioactive material is produced by neutron absorption by various materials. These radioactive materials are handled in many ways, including liquids contained in pipes and tanks and radioactive solids contained in plastic bags or specialized containers. After the reactor is shut

down, no additional radioactive material is produced and the radioactive material decay process reduces the total amount of radioactive material over time. The handling of radioactive material after shutdown is controlled in the same manner as before shutdown with no more likelihood of exposure to radiation. Supervision of radioactive material handling is performed by the licensee before and after reactor shutdown with the oversight of licensee radiation protection personnel. Region-based NRC inspectors provide a periodic verification to the Commission that the licensee is handling radioactive materials within the bounds of the current regulations.

Public Comment #9: Ray Shadis felt that the NRC should hire a contractor to determine why/how 10 CFR Part 50 was contorted to fit decommissioning reactors with the duct tape of 10 CFR 50.82 to avoid adjudicatory processes with regulatory handles.

Response: When the NRC issued decommissioning regulations in 1988, it was assumed that decommissioning would normally take place after the facility's operating license expired. The licensee was obligated to submit a preliminary decommissioning plan 5 years before the license expired. The preliminary decommissioning plan contained a cost estimate for decommissioning and an up-to-date technical assessment of the factors that could affect planning for decommissioning. This included (1) the choice of alternative, (2) the major technical actions necessary to carry out decommissioning safely, (3) the current situation with regard to disposal of high-level and low-level radioactive waste, (4) the residual radioactivity criteria, and (5) other site-specific factors that could affect decommissioning planning and cost.

The ~~previous~~ 1988 rule also required that no later than 1 year before expiration of the license (or within 2 years of permanent cessation of operations for plants closing before their license expires), a licensee had to submit an application for authority to decommission the facility. The application was to be accompanied by or preceded by a proposed decommissioning plan. The proposed decommissioning plan was to include (1) the choice of the alternative for decommissioning with a description of the activities involved, (2) a description of controls and limits on procedures and equipment to protect occupational and public health and safety, (3) a description of the planned final radiation survey, (4) an updated cost estimate for the chosen alternative and a plan for ensuring the availability of adequate funding, and (5) a description of the technical specifications, quality assurance provisions, and physical security plan provisions in place during decommissioning. A supplemental environmental report that described any substantive environmental impacts that were anticipated but not already covered in other environmental impact documents was also required.

The NRC reviewed the decommissioning plan and would approve it if the plan demonstrated that the decommissioning would be performed in accordance with regulations and there were no security, health, or safety issues. The Commission would also require that notice be given to interested persons. However, the NRC could add other conditions and limits to the plan that it deemed appropriate. The license would then be terminated if the Commission

determined that the decommissioning had been performed in accordance with the approved decommissioning plan and the order authorizing decommissioning, and if a final radiation survey and associated documentation demonstrated that the facility and site were suitable for release for unrestricted use.

In August 1996, the regulations were revised.

The regulations were revised for several reasons. First, the experience gained in the early decommissioning activities associated with several facilities did not reveal any activities that required NRC review and approval of a decommissioning plan. Second, environmental impacts associated with decommissioning those early facilities resulted in impacts consistent with those evaluated in the "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," NUREG-0586. And finally, experience gained from reviewing numerous decommissioning oversight activities at a number of these facilities also indicated that the decommissioning activities were in general no more complicated than activities normally undertaken at operating reactors without prior and specific NRC approval. ~~In August 1996, the revised rule that redefined the decommissioning process and required~~ licensees to provide the NRC with early notification of planned decommissioning activities at their facilities went into effect. The rule made the decommissioning process more efficient and uniform. It provided for greater public awareness and participation in the decommissioning process and gave plant personnel a clearer understanding of the process for changing from an operating organization to a decommissioning organization.

Public Comment #10: Ray Shadis stated that little of what operators or reactor inspectors have learned is applicable to decommissioning. NRC needs personnel specifically trained in and dedicated to decommissioning.

Response: There is a significant change during the transition from an operating plant to a decommissioning plant. However, many of the decommissioning activities are similar to those during operations. For example, the complete removal of components and systems, radiological waste shipments, fuel handling operations, and spent fuel pool system operations and maintenance which occur during decommissioning are very similar to activities that occurred during plant operation and refueling outages. Objectives during decommissioning, such as, protecting the spent fuel from sabotage and maintaining the spent fuel pool operational, were also accomplished during plant operation. The training received by operators and inspectors associated with radiological fundamentals, system operations, etc., still applies during decommissioning.

Although there is not an NRC inspector on-site during all of decommissioning, as there is during plant operation, there is a group of inspectors in each region who are specifically assigned to oversee plants undergoing decommissioning, and who make routine visits to the site (commensurate with the quantity and significance of the ongoing work). Each plant in decommissioning is also assigned to a project manager located at NRC Headquarters. These project managers are assigned to a section that is responsible only for decommissioned power reactors.

Public Comment #11: Untrained NRC public representatives frequently misinform the public, particularly about the opportunities for a hearing on reactor decommissioning.

Response: The NRC endeavors to train all NRC employees for their specific work assignments. In the event that misinformation is inadvertently communicated by an individual staff member, the NRC staff upon identifying the misinformation provides the correct information in the most expedient manner.

Public Comment #12: Ray Shadis cited several specific examples of interactions with NRC staff that he felt demonstrated improper or inaccurate information provided by NRC staff members.

Response: In the course of oral communication with the public in an open and unrestrained fashion, errors, miss-spoken words, and misunderstandings will occur by the individuals from the public and the NRC staff. The NRC endeavors to minimize these miss communications from our staff, but should they occur, NRC staff will act to correct them by the most expedient means available.

Public Comment #13: At the November 8, 1999, Commission meeting, Ray Shadis said that the time delays experienced by licensees who must submit individual heatup analyses and applications for exemption from NRC regulations could be mitigated by preparation of such documentation well in advance of decommissioning.

Response: It is true that decommissioning licensees who have planned reactor shutdown schedules far in advance would be able to submit exemption requests and conduct supporting thermal-hydraulic analyses in advance of reactor shutdown so that lengthy regulatory delays could be minimized. However, plants that shut down unexpectedly would not be able to submit such analyses in advance. The NRC believes that it should promulgate new decommissioning regulations that ensure public health and safety, reduce unnecessary regulatory burden and increase the efficiency and effectiveness of operations for both licensees and the NRC.

Public Comment #14: In a March 15, 2000, letter to the NRC, David Lochbaum of the Union of Concerned Scientists, said that the NRC staff owes its stakeholders the courtesy of addressing their concerns, particularly when comments are solicited by the NRC staff. Otherwise, the NRC staff must stop actively soliciting public comment when it has no intention of considering.

Response: At the July 15-16, 1999 public workshop on decommissioning spent fuel pool risk, Mr. Lochbaum raised a concern that the NRC evaluate potential hazards that decommissioning accidents could impose upon plant workers. When the NRC issued its final draft report, Mr. Lochbaum's issue was not specifically addressed in the comment evaluation section. However, the NRC had received an industry decommissioning commitment that licensees would provide a remote method of adding water to spent fuel pools that resulted from the issue Mr.

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Lochbaum had raised. An evaluation of Mr. Lochbaum's concern is now included in the response to Comment ?????**TANYA TO PROVIDE REFERENCE**???????above???.

Public Comment #15: Mr. David Lochbaum of the Union of Concerned Scientist (UCS) stated that industry decommissioning commitment (IDC) #5 should be revised to require direct measurement of SFP temperature and water level.

Response: The staff agrees with Mr. Lochbaum and has incorporated this clarification in its sample regulatory language for emergency preparedness in the integrated decommissioning rulemaking plan, SECY-00-0145, issued on June 28, 2000.

TANYA WE Need to confirm that this is being addressed in the TWG report!

Public Comment #16: Peter James Atherton requested on April 10, 2000, that the comment period on the spent fuel pool risk report be extended by 3 months.

Response: The original 45 day comment period ended on April 7, 2000. In April, the NRC extended the comment period until the end of May 2000.

Public Comment #17: The NRC should identify and address possible conflicts of interests, and differing professional opinions as to the use of PRA (probabilistic risk assessment). For instance, Dr. Hanauer was quoted in a memo to say, "you can make probabilistic numbers prove anything, by which I mean that probabilistic numbers mean prove nothing."

Response: It is the policy of the Commission to maintain a working environment that encourages the employees to make known their best professional judgements even though they may differ from a prevailing staff view. An objective of this policy is to ensure full consideration and prompt disposition of differing opinions and views by affording an independent, impartial review by qualified personnel.

Dr. Hanauer was a respected technical advisor. However, in the two and a half decades since his statement was quoted ("you can make probabilistic numbers prove anything, by which I mean, that probabilistic numbers prove nothing"), there have been significant advances in risk assessment methodologies. In that time frame, the NRC has also gained a great deal of experience in applying these methodologies to the regulatory arena, which has led to improved safety. The NRC has determined that PRA is an acceptable technology and uses it in a manner that complements a deterministic approach and supports the traditional defense-in-depth philosophy.

Public Comment #18: Dr. Hanauer was quoted in a 1975 memo to say, "you can make probabilistic numbers prove anything, by which I mean that probabilistic numbers prove nothing." If a respected technical advisor has expressed doubts about the NRC's use of

probabilistic numbers, how is the NRC going to use probabilities convincingly to protect health and safety? I feel that this is an invalid way of measuring safety, and should not be used. Each day these reactors stay opened you are poisoning the environment. This is unacceptable.

Response: The issue of Dr. Hanauer's quote is addressed in public comment #17. The staff has already addressed the use of probabilities in Section 2.0 of the February 15th draft report. Overall, the NRC uses risk insights together with other factors to better focus licensee and regulatory attention on design and operational issues commensurate with their importance to health and safety.

Public Comment #19: Peter James Atherton stated that the NRC should make references used in the spent fuel pool risk study available at no cost.

Response: The NRC policy is that all pertinent regulatory information is made available to the public via the Public Document Room and/or through the Agency Document and Management System (ADAMS) where this information is available for inspection at no charge. However, during the period of this study, the NRC took additional actions to provide Mr. Atherton with free copies of all routine correspondence and of numerous studies and reports that he specifically requested.

Public Comment #20: Peter James Atherton commented that changes to decommissioning regulations should be made on an interim basis, to be reviewed again at some future date.

Response. The NRC does not plan to issue interim regulations for decommissioning. Rulemaking is a methodical and deliberately lengthy procedure to ensure that a rule is not issued without due process. Provisions for public comment as well as independent review committees afford ample opportunity to examine a rulemaking prior to issuing a new rule. Any person who believes an NRC regulation is no longer applicable may petition the Commission to issue rescind, or amend that regulation in accordance with 10 CFR 2.802.

Public Comment #21: Mats Sjoberg and Ferenc Muller of SKI (Sweden) asked if the NRC had considered the events with the "second" worst offsite consequences at decommissioning plants. For example, at the Barseback nuclear power plant, a fire in the bitumen storage (waste handling area) is found to have the second worst, although limited, offsite consequences.

Response. The draft NRC study was concerned with identifying the worst conceivable beyond-design basis spent fuel pool accident to determine what reductions of NRC operating reactor requirements would be appropriate at permanently

shutdown plants. Separate from the draft report, the NRC did consider other, less severe accidents with offsite consequences. The rulemaking plan established for the first group of rule changes (ie. the integrated rulemaking), recommends that licensees perform reviews at their facilities to ensure that there are no other possible accidents that could result in offsite consequences exceeding EPA Protective Action Guidelines before reductions may be made in emergency preparedness and insurance requirements.

Public Comment 22 Tanya **DELETE This ITEM!!!** Copies of the requested documents were mailed to SKI on June 30, 2000.