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

January 10, 1984

MEMORANDUM FOR: File

THRU: Hollis Bowers, AD/I, OIA

FROM: Ronald M. Smith, Senior Investigator
Office of Inspector and Auditor

SUBJECT: RECEIPT OF ADDITIONAL MATERIALS

During the period December 30, 1983 through January 5, 1984, I received additional documents which I had requested from Judge Frye's office. They include:

- NRC Staff Motion for Summary Disposition, April 13, 1983.
- Intervenor's Supplemental Response to NRC Staff's Motion for Summary Disposition as to the Issue of the Applicability of 10 CFR 73.60 and the Need to Protect Against Sabotage, February 8, 1983.
- Intervenor Committee to Bridge the GAP's Final Supplemental Response to NRC Staff's Motion for Summary Disposition as to the Issue of the Applicability of 10 CFR 73.60 and the Need to Protect Against Sabotage, April 13, 1983.
- Intervenor Bridge the GAP's Response to NRC Staff's Motion for Summary Disposition as to the Issue of the Applicability of 10 CFR 73.60 and the Need to Protect Against Sabotage, September 9, 1982.
- Letter, Bay (CTBG) to Frye (Admin. Law Judge) February 14, 1983.

Portions of the above documents were extracted for use in interviewing the two subjects Miller and Carlson.

On January 9, 1984, it was learned that Miller and Carlson were to have completed packages, concerning the allegations against them, for presentation to the Board (ASLBP) on the 10th. Copies are also to be provided to the writer for review and appropriate action.

The documents described above are filed separately behind this case file.

file: 84-9

C-41
B-4
84-4

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PDR FOIA
AFTERG88-A-50 PDR

U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription January 11, 1984

Report of Interview

Mr. Donald M. Carlson, Plant Protection Analyst, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, NMSS, upon interview concerning an allegation that he had given false information in an affidavit presented to the ASLB in its consideration of the relicensing of the nonpower reactor at UCLA, provided the following information:

As in the case of Mr. Miller, Mr. Carlson had also prepared an affidavit for the ASLB pursuant to their December 23, 1983 Order. A copy of that affidavit was provided and is attached hereto. Mr. Carlson also provided a copy of the formal "NRC Staff Response to Board Order to Respond to the Committee to Bridge the Gap's Allegation of Material False Statements" (Attached).

Basically, as indicated in his affidavit, Mr. Carlson's explanation of the apparent contradiction between earlier statements made by him that Section 73.40, 10 CFR, applied to nonpower reactors and included a requirement to protect against radiological sabotage and his statement before the ASLB that there was no specific provision which required such protection can be found in the fact that Section 73.40 has meant different things at different times, so that he was correct both times. In support of this explanation, Mr. Carlson also provided a copy of a draft memorandum for the Commissioners which explains the history of Section 73.40 (attached). This memo should be going to the Commission within days according to Carlson.

Mr. Carlson was then advised that the materials provided would have to be reviewed more carefully than a one time reading and that he would be contacted again if further questions arose. He readily agreed to cooperate in such an event.

Attachments:
As Stated

C-42
B-5

Investigation on January 10, 1984 at Bethesda, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated January 11, 1984

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(10-82)

84-9

U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription January 11, 1984

Report of Interview

James R. Miller, Chief, Operating Reactor Branch #3, Division of Licensing, NRR, upon interview concerning an allegation that he gave a false affidavit to the ASLB in its consideration of the relicensing of the UCLA nonpower reactor, provided the following information:

Pursuant to a Memorandum and Order by the ASLB dated December 23, 1983, Mr. Miller has prepared an affidavit which addresses the allegation made by the Committee to Bridge the Gap. A copy of the affidavit (which has also been provided to the ASLB) was provided to this investigator and is attached hereto.

Upon reading the affidavit, this investigator asked clarifying questions. Based on the affidavit and Mr. Miller's answers, his explanation of what he said to the ASLB was that he had made "calculations" using data received via telephone from UCLA to determine what level of radiation the irradiated fuel would give off if UCLA, in fact, carried out their commitment to operate the reactor in accordance with a scheduled which they had also provided. As indicated in his affidavit, he and Mr. Robert E. Carter (copy also attached), using their "independent" calculations, produced a result that was consistent with UCLA's assertion that they could maintain a 100 rem/hr, or more, level by following the operating schedule to which they had committed. Mr. Miller did not actually go to the reactor to take readings and did not confirm that UCLA was actually following their intended operating schedule.

Mr. Miller asserted that, read in the light of his most recent affidavit and the attendant facts presented, his original affidavit was correct. He further explained that he was interested in what the potential licensee intended to do under the license and that the question of whether UCLA was actually performing in that manner was a matter for IE.

Mr. Miller was advised that he would be contacted again if further questions were raised, to which he readily agreed.

Attachments:
As Stated

C-43
B-6

Investigation on January 10, 1984 at Bethesda, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated January 11, 1984

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EXHIBIT

NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription January 24, 1984

Analysis of Miller Affidavits

As stated by James R. Miller, Chief, Operating Reactor Branch #3, in his affidavit of January 9, 1984, he did execute an earlier affidavit on April 6, 1981 for presentation to the Atomic Safety and Licensing Board (ASLB) considering the University of California (UCLA) application for renewal of its license to operate the UCLA research reactor. The Committee to Bridge the GAP (CBG) has alleged that a portion of the April 1981 affidavit was materially false, specifically paragraph seven, to wit: "I have verified that the irradiated fuel in the UCLA reactor core emits radiation such that the dose at three feet will be in excess of 100 rems per hour and that the design of the reactor makes accessibility to that fuel very difficult. In addition, UCLA has committed to schedule reactor operations to maintain the self protection of the fuel in the reactor core."

CBG alleges that "Mr. Miller asserted, under oath, that he had personally verified that UCLA's fuel met the 100 rem exemption." (Lines 4-5, page 11, CBG Memorandum as to Status of Contention XX (Security), December 13, 1983).

Support for CBG's contention that Mr. Miller's affidavit was false lies primarily in CBG's offer of proof of an August 15, 1979 letter and a January 12, 1981 letter. Within the former letter, Dr. Harold Brown, speaking as the Environmental Health and Safety Officer for UCLA, stated in pertinent part that "It does not seem possible to meet the 100 r/m at 3' at all times for the reactor fuel." Addressing a related issue of whether UCLA was subject to Category 1 Physical Security Requirements, Mr. Miller in January 1981 said that because of the quantity of material on hand, UCLA was subject to the requirements contained in 10 CFR 73.67(a)(b)(c)(d) and 73.60 (which itself requires more stringent measures). In the alternative, UCLA "would have to be operated to maintain the fuel irradiation level at a dose rate of 100 rem/hr at three feet from any accessible surface."

In his January 9, 1984, affidavit, Mr. Miller explains that he did verify "by independent calculations," performed by him and a member of his staff, Robert E. Carter, "that the irradiated fuel in the UCLA core would be in excess of 100 rems per hour (unshielded) and that the design of the reactor makes accessibility to that fuel very difficult." Mr. Miller further noted UCLA's previous commitment to the NRC by a letter dated January 29, 1981, that UCLA "intended to schedule reactor operations such that UCLA would conform with the self-protection criteria for the in-core fuel."

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B-7

Investigation on January 13 & 23, 1984 at Bethesda, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated January 23, 1984

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Upon separate questioning, it was learned from Mr. Miller that he did not go to the reactor to take readings and did not confirm that UCLA actually was following their "intended" schedule. Mr. Miller went on to explain that he, as a licensing official, was interested in what the licensee intended to do under the license and whether that met regulatory requirements. The question of whether UCLA was actually performing in that manner is, in his view, within the purview of IE.

Read in its worst light, and out of context, Mr. Miller's first contested sentence, wherein he alleges verification of the reactor core emissions, could be characterized as misleading, particularly when read in the context of paragraphs 4-6 of his April 1981 affidavit because it is easy to infer from the on-site references in those paragraphs that Mr. Miller's "verification" was also made on site. Further, he talks in terms of the core "emits" (present tense) radiation; but later in the sentence notes that the dose "will be" (future tense) in excess of 100 rem per hour. As indicated above, Mr. Miller has explained in his most recent affidavit that his verification was via calculations only based on an intended operating schedule to which the licensee had committed some two months previous. In the second sentence of the contested paragraph, Mr. Miller clearly notes that UCLA "has committed to schedule reactor operations to maintain the self protection of the fuel in the reactor core."

Thus, it can be seen that Mr. Miller, in the strictest sense and according to his affidavits, did verify the emissions based on the UCLA proposed schedule. Although it can be argued that Mr. Miller could have been more clear in describing the context of his remarks, i.e., that his verification was based on calculations and not on-site measurement, it is also true that there were indications in the paragraph that he was speaking in terms of future conditions and was not necessarily stating a current fact. Secondly, in checking with the ASLB, it was learned that no testimony was taken concerning Mr. Miller's affidavit. Therefore, any confusion or misapprehension that may have been present based on the first affidavit appears to be dispelled by the January 9 affidavit.

Attachments:
1. Miller Affidavit, dated April 8, 1981
2. Miller Affidavit, dated January 9, 1984
3. Carter Affidavit, dtaed January 9, 1984

Investigator Note: Attachment 1 is Exhibit 3 to the basic report and Attachments 2 and 3 are attached to Exhibit 2 , basic report.

U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription January 30, 1984

Comparison of [Carlson] Affidavits

In his affidavit of January 10, 1984, [Ronald M. Carlson, Plant Protection Analyst, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Materials Safety and Safeguards,] addresses the allegation made by the Committee to Bridge the GAP (CBG) that in his earlier affidavit to the Atomic Safety and Licensing Board (ASLB), dated April 7, 1981, he made a false material statement to wit: "There are no explicit NRC regulations for the protection of non-power reactors against radiological sabotage..."

In support of the allegation, CBG cited the following:

> On August 27, 1979, at a meeting in Glen Ellyn, Illinois, discussing the "Impact of the Safeguards Upgrade Rule on Nonpower Reactor Licensees," Mr. Carlson is quoted from a transcript of the meeting as saying "What I might add, you have to protect against sabotage under the provisions of 73.40" (emphasis added) and later, "You have to follow the provisions of 50.35c which tells you that you have to follow 73, Part 73, and in there, in 73.40, it says you have to protect against sabotage..."

Basically, it is [Mr. Carlson's] position that he was correct in both instances and that the apparent inconsistency is explained by a change in NRC position in the interim between the two statements.

In support of this explanation, [Mr. Carlson] offers that on January 16, 1979, the Office of Standards Developments, NRC, had submitted a staff paper to the Commission which proposed amendments to then regulations 73.47 (now 73.67) limited to consideration of theft of Special Nuclear Material (SNM) which "did not include sabotage protection." He went on to add that "the NRR staff is currently examining the necessity to require additional physical protection measures at non-power reactors that have the potential for exceeding Part 100 release limits as a result of sabotage." If such a change were necessary, it was to be published as a separate section of Part 73.

[Mr. Carlson] also notes that an unclassified abstract of a June 1979 Los Alamos Scientific Laboratory study classified confidential and entitled, "Consequences of Sabotage of Nonpower Reactors" (NUREG/CR-0843, LA-7845-MS), in pertinent part, stated that only one nonpower reactor (not UCLA's) had a potential for release of significant amounts of radiation.

He goes on to cite a July 24, 1979, publication of an NRC rule wherein the discussion notes that "Since protection against sabotage is not within the scope of these amendments, an entry search requirement is not necessary."

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C-4

Investigation on January 27, 1984 at Bethesda, Md. File # 84-9
by Ronald M. Smith, Investigator, OIA Date dictated January 27, 1984

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[Carlson] then concludes that based on the Commission paper and the adopted rules, "there appears to be a clear and unmistakable approval by the Commission that sabotage protection was not needed at nonpower reactors at the time of my affidavit." Therefore, he believes his April 7, 1981 affidavit to be true.

As to the inconsistency of that statement with the prior statement concerning section 73.40 made in 1979, [Carlson] notes that at the time of the meeting (he affirms that he did make the statements concerning 73.40), "a review and analysis of the Los Alamos study (referenced above) had not been made yet" nor had a staff technical position been developed. "Therefore, because of the uncertainty of what the NRC position was, he did not feel his response was inappropriate. He goes on to concede that a more accurate statement might have included "you may have to protect against sabotage..." Then he again notes that the "status of the safeguards regulations covering sabotage protection for nonpower reactors was still uncertain. In addition, the practical impact of the new regulations 73.60 and 73.67 was still being discussed."

Of significant interest is [Carlson's] discussion of the apparent fact that reference to sabotage in 73.40(a) was originally directed toward "industrial sabotage" and theft and not radiological sabotage.

In sum, [Carlson] concludes "that my statements at the 1979 meeting...were true at the time...and do not contradict the truth of my statements in my 1981 affidavit."

Attachment:
Affidavit of [D. M. Carlson,] dated 1/10/84
w/cy of 4/7/81 affidavit.

S. NUCLEAR REGULATORY COMMISSIO.(
Office of Inspector and Auditor

Date of transcription January 30, 1984

Comparison of [Woodhead] Presentations

In the Committee to Bridge the Gap's (CBG) "CBG Memorandum as to Status of Contention XX (Security)," dated December 13, 1983, and in addition to the allegations concerning [James R. Miller] and [Donald M. Carlson,] CBG alleged that U.S. Nuclear Regulatory Commission (NRC) staff, later identified in the Atomic Safety and Licensing Board Panel (ASLBP) Board Order of December 23, 1983, as the Staff Counsel [(Colleen Woodhead)], had denied "that UCLA had more than a formula quantity of SSNM shortly after the technical staff had written UCLA indicting that more than a formula quantity (5000 g.) existed."

In the "NRC Staff Response to Board Order to Respond to CBG's Allegations of Material False Statements," [Ms. Woodhead] noted that a typographical error in the transcript of the hearing in question indicated less than "500 grams" when it should have read "5000 grams." She went on to point out (page 21) other instances where the figures of "4700 unirradiated" and "4700 irradiated fuel was on hand. She further notes that CBG had also "stated there was just under 5 kgs. in the core (irradiated) and just under 5 kgs in the storage vault" (unirradiated). She, therefore, concludes that the allegation is disproved by "the very transcript reference cited in support of the assertion."

Attachment:
NRC Staff Response to Board Order to Respond
to CBG's Allegations of Material False
Statements, dated January 10, 1984.

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B-9

Investigation on January 27, 1984 at Bethesda, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated January 27, 1984

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84-9

U. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription February 28, 1984

Report of Interview

Donald M. Carlson, Plant Protection Analyst, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Materials Safety and Safeguards (NMSS), upon interview concerning an allegation that he had given false information in an affidavit presented to the Atomic Safety and Licensing Board Panel (ASLBP) in its consideration of the relicensing of the nonpower reactor at the University of Southern California (UCLA), provided the following information:

He again reiterated that his statement in the meeting held in Region III in 1979 was true, as of that time, regarding the need for protection against sabotage. The subsequent affidavits (April 1981 and January 1984) are also true because the rules have changed since 1979, i.e., the promulgation of Sections 73.60 and 73.67, upgrading protection requirements against theft. It is his, and the staff's, contention that the specific requirements of 73.60 and 73.67 overtook the general provisions of 73.40(a). In other words, 73.40(a) is an old regulation that should have been clarified years ago as to its intent. The SECY paper 83-500 proposes to accomplish that clarification.

(At this point the interview was suspended so that Carlson would have the opportunity to gather material which would support what he was saying. It was intended that the interview would be continued the following day. At this investigator's instigation, the continuation of the interview was delayed because of receipt of more materials from the ASLBP pertinent to the investigation and which conceivably had a bearing on the interview.)

C-47
13/13

Investigation on February 15, 1984 at Silver Spring, Md. File # 84-9

By Ronald M. Smith, Investigator, OIA RMS Date dictated February 28, 1984

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U.S NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription February 29, 1984

Report of Interview

James R. Miller, Chief, Operating Reactors Branch #3, Division of Licensing, NRR, upon followup interview, concerning an allegation that he gave a false affidavit to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:

In regard to Daniel Hirsch's allegation (see Daniel Hirsch interview dated February 13, 1984) that Miller's earlier assertion that UCLA could meet the "100 rem/hr at three feet" requirement for exemption from certain safeguards requirements was contrary to several earlier representations, Mr. Miller noted that prior to his letter to UCLA on January 12, 1981, he did say that UCLA could not meet the 100 rem/hr exemption based on the fact that they operated the reactor in such a way that it could not meet the exemption. When it was determined that either fuel had to be removed to another location or the reactor operated in such a way as to maintain 100 rem/hr at three feet (January 12 letter), UCLA committed to operate the reactor so as to maintain the 100 rem level. As previously addressed, Mr. Miller verified via calculations what operating schedule would be required to achieve that level.

Based on the last page of the calculations attached to his 1981 affidavit, it can be confirmed that Miller also showed that after a week, a two hour operation would result in an exposure of only 26 rem/hr. Accordingly, if the reactor operated for two hours on Friday, it would have to be operated again on Monday or the rate would drop below 100 rem/hr. Therefore, Miller is in agreement with Hirsch that after three days, the irradiated fuel could drop below 100 rem/hr. But Miller again noted that UCLA committed to a schedule that would maintain the 100 rem/hr. Whether UCLA fulfilled its "commitment" was a compliance issue. He noted that he was always talking in terms of "calculations" of dosage and "commitment" of the licensee for licensing purposes.

After reviewing the August 15, 1979 letter from UCLA to Miller wherein UCLA stated "It does not seem possible to meet the 100 rem at 3' at all times for the reactor fuel." Miller observed that that was consistent with both his January 12 letter and his calculations based on operation of the reactor. In short, if the operations were not in accordance with the calculations attached to his 1981 affidavit (which they weren't) then the statement was true. He did not believe that he had ever made a flat comment that they could not meet the exemption, rather he had always limited such judgments to the then current operating conditions of a reactor.

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B-15

Investigation on February 29, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated February 29, 1984

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[Miller] did recall that he wrote a note to Victor Stello* in the past wherein he said something to the effect that "the reactors checked will be in trouble if the 100 rem exemption were lifted." But this was in the context that if there were not a 100 rem/hr exemption, then total fuel would be counted. The total fuel in most instances would be in excess of formula quantity (5 kg.), thereby triggering the safeguards requirements 10 CFR 73.60.

(Investigator's Note: A copy of what is believed to be the referenced "Stello" memo was retrieved from the Office of Inspector and Auditor investigative file after the interview. As it makes reference to [UCLA being unable to "attain and sustain a total external radiation dose rate in excess of 100 rems per hour at three feet," an additional followup interview with Miller] will be necessary the week of March 5 when he returns to the office.)

* Victor Stello, Deputy Executive Director for Regional Operations and Generic Requirements, was at that time Director, Division of Operating Reactors, NRR.

U.S. NUCLEAR REGULATORY COMMISSIC
Office of Inspector and Auditor

Date of transcription March 1, 1984

Report of Interview

Donald M. Carlson, Plant Protection Analyst, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Materials Safety and Safeguards, (NMSS), upon interview concerning an allegation that he had given false information in an affidavit presented to the Atomic Safety and Licensing Board Panel (ASLBP) in its consideration of the relicensing of the nonpower reactor at the University of Southern California (UCLA), provided the following information:

When contacted by telephone regarding the continuation of the interview with him begun February 15, 1984, Carlson stated that he would not be prepared to talk to me until he had responded to the ASLBP Board Order. (This refers to the Memorandum and Order dated February 24, 1984.) He is willing to provide a copy of the response to the ASLBP to this office.

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B-10

Investigation on February 28, 1984 at Bethesda, Md. File # 84-9

By Ronald M. Smith, Investigator, OIA Date dictated March 1, 1984

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U S NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription March 13, 1984

Report of Interview

James R. Miller, Chief, Operating Reactors Branch #3, division of Licensing, NRR, upon followup interview concerning an allegation that he gave a false affidavit to the Atomic Safety Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:

He confirmed the memorandum (attached) from Miller to Stello, Subject: Impact of Proposed Safeguards "Upgrade" Rule on Non-Power Reactors, undated, as being the memo to "Stello" to which he had referred in his previous interview (see Report of Interview dated 3/1/84). He could not establish the date of the memo, but thought based on the context of the memo, that it was written after January 1979 and possibly in May 1979 (because of what appears to be a partial date in the upper right corner of memo).

Referring back to his characterization in the previous interview that the memo sent a message to the effect that "the reactors checked will be in trouble if the 100 rem exemption were lifted," he noted that although those exact words were not used, that that nevertheless was the message contained in the context of the memo. (Investigator note: A review of the memo indicates that the cited quotation does appear to be an accurate summation of the basic message communicated by the memo.)

The remaining questions centered around the following language contained in the memo: "As we now see the situation, the fuel elements associated with these reactors cannot attain or sustain a total external radiation dose rate in excess of 100 rems per hour at three feet; therefore, these non-power reactors will come under the 'upgrade' rule. The only immediately foreseeable solution is to remove non-power reactors from the proposed safeguards rules and concurrently prepare a separate physical protection rule for non-power reactors" (emphasis added).

Mr. Miller explained that the quoted sentence had to be read in the context of the "operating cycles and fuel management" existent at that time. In other words, if something else were not done, e.g., irradiating the fuel to the self protection level, getting the quantity of fuel below "formula quantity," or changing the operating schedules, the quotation is true. In this particular instance, the changing of the operating schedule was key in facilities like the UCLA reactor.

C-53
B-17

Investigation on March 12, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA RMS Date dictated March 13, 1984

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The fact that the quoted language talked in terms of "fuel elements" while Mr. Miller's "calculations" (Report of Interview dated January 11, 1984) addresses the total fuel in the reactor is explained by the fact that whether elements or total fuel is considered is based on whether the elements are "readily separable." In the case of the UCLA reactor, the fuel elements are beneath approximately 10 tons of interlocking concrete caps which must be removed before access to the individual elements can be made. In contrast, the "open pool" reactors allow ready access to individual elements simply by reaching down and grabbing them in some cases. Accordingly, the calculations for the UCLA reactor were made considering all of the fuel elements together within the reactor.

When asked whether to his knowledge any of the three proposed steps mentioned in the memo had been acted upon, he replied that he was not aware of any action being taken on any of them.

Attachment:
As Stated

U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription March 20, 1984

Report of Interview

Donald M. Carlson, Plant Protection Analyst, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Materials Safety and Safeguards, upon reinterview and as a followup to his previous interview (see Report of Interview dated March 1, 1984), provided the following information:

When apprised that his affidavit of March 9, 1984, appeared in certain particulars to be in contradiction with the fact that the Office of Inspection and Enforcement (IE) still has an inspection requirement and module which address protection against radiological sabotage and that, in fact, such inspections have been carried out as recently as November 1983, Mr. Carlson said that he was unaware of either the inspection requirement or the fact that inspections had been conducted. He offered that the Office of Inspector and Auditor would have to check with IE to learn why they had the chapter and had conducted the inspections. He still maintained that it was and had been the intent of his office (Safeguards) that there was no requirement to protect against radiological sabotage since the adoption of Section 73.67 in 1979.

In summary, Mr. Carlson still maintains that his affidavits are true to his knowledge and offered that he is willing to go on the "machine" (polygraph) to back up that contention.

(Investigator's Note: The Carlson affidavit reference above is an attachment to the "NRC Staff Response to Allegations of Misrepresentation Made by the Atomic Safety and Licensing Board" dated March 9, 1984, and filed before the ASLBP under Docket No. 50-142 that same date.)

C-51
B-19

Investigation on March 15, 1984 at Silver Spring, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated March 16, 1984

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription March 20, 1984

Report of Interview

Russell R. Rentschler, Section Chief, Physical Security Licensing Section, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Material Safety and Safeguards, upon interview concerning a possible false statement to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:

When asked about the apparent contradiction between his affidavit of March 8, 1984, presented to the ASLBP* and the fact that the Office of Inspection and Enforcement (IE) has an inspection chapter and module which address "Protection Against Radiological Sabotage" and has inspected facilities under them as recently as November 1983. Mr. Rentschler said that he was not aware of IE Manual Chapter 2545 (containing sabotage inspection requirement) in detail, but was working with Nancy Ervin (Operating Reactor Programs Branch, Division of Reactor Programs, IE) to get the chapter revised. He was not aware of any inspection reports like those on Virginia Polytechnic Institute and Iowa State University which indicate inspections for protection against radiological sabotage were conducted as recently as November 1983.

He expressed the view that with the adoption of section 73.67 (10 CFR), it was and has been Safeguards' view that 73.40 only applies to power reactors. He did acknowledge that 73.40 did originally apply to both power and nonpower reactors.

(*Mr. Rentschler's affidavit is an attachment to the "NRC Staff Response to Allegations of Misrepresentation Made by the Atomic Safety and Licensing Board" dated March 9, 1984).

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B-20

Investigation on March 15, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated March 20, 1984

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U... NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription March 27, 1984

Report of Interview

Joseph R. Gray, Assistant Chief Hearing Counsel, Hearing Branch IV, Hearing Division, Office of the Executive Legal Director (ELD), upon interview concerning his knowledge of whether Ms. Woodhead might have given false information to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at UCLA, provided the following information:

He, like Ms. Woodhead (see her Report of Interview dated March 20, 1984), was not aware of the existence of the Inspection and Enforcement (IE) Manual Chapter 2545 nor of the Inspection Reports which addressed protection against radiological sabotage at Virginia Polytechnic Institute and Iowa State University.

He did understand how the existence of these documents could raise questions about the accuracy of earlier statements and advised that they (ELD) would have to formally notify the Board (ASLBP) of the documents.

He further noted that they (ELD) just did not think of IE because the central issue from their perspective had always been whether Contention XX should even be entertained by the ASLBP (that is the existence or nonexistence of a radiological sabotage protection requirement) and not how good the protection was or was not. One simply did not reach the second issue if there was no protection requirement as maintained by NMSS Safeguards.

C-53

B-4

Investigation on March 16, 1984 at Bethesda, Md. File # 84-9

By Ronald M. Smith, Investigator, OIA Date dictated March 27, 1984

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U.S NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription April 20, 1984

Report of Interview

Loren Bush, Senior Security Specialist, Operating Reactor Programs Branch, Division of Quality Assurance, Safeguards and Inspection Programs, Office of Inspection and Enforcement (IE), upon interview concerning possible misstatements by U.S. Nuclear Regulatory Commission (NRC) employees before the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the non-power reactor at the University of California at Los Angeles (UCLA), provided the following information :

A copy of a September 1980 memorandum (Attachment A), was provided by Bush which announced the discontinuance of inspections at power reactors, fuel cycle facilities and irradiated fuel shipments.

In a brief discussion of IE Manual Chapter 2545, dated January 27, 1984 (Attachment B), it was noted that Table 5 of the Chapter indicates an inspection procedure (#81455) addressing Protection Against Radiological Sabotage which is currently applicable only to facilities with nuclear material of high strategic significance. Table 5 also indicates that the 81N00 Series is applicable to facilities with materials of moderate or low strategic significance. Table 2 confirms 81N00 Series as the inspection procedures for such facilities as the University of Florida, Virginia Polytechnic Institute, and UCLA. The 81N00 procedures have not been formally issued, although a draft version dated September 18, 1980, was sent to the field for their use in May 1981 (see Attachment C). That same memo directed continued use of the 81400 Series for Category I non-power reactors (high strategic significance) and 81N00 Series for Category II and III non-power reactors (moderate and low strategic significance).

Extracts of Procedures 81N22 and 81N38 (Attachments D and E, respectively) also were provided. Procedure 81N22 contains reference to 10 CFR 73.40(a) twice and the term "radiological sabotage" once. Meeting the requirements of Section 73.40(a) as a goal or objective is conditioned on requirements in the Physical Security Plan (PSP) submitted by the licensee. No further reference to protection against radiological sabotage is made in that procedure. Procedure 81N38 contains even briefer reference to "radiological sabotage" and then only in terms of meeting the reporting requirements of 10 CFR 73.71(b).

The interview of Mr. Bush was conducted in the presence of his supervisor, Phillip F. McKee, Chief, Operating Reactor Programs Branch, and Nancy Ervin, Security Specialist, within the same branch.

B-2 C-54

Investigation on April 16, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated April 19, 1984

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(10 82)

With regionalization, two reorganizations by IE that gave responsibilities for these matters to others, the above referenced discontinuance of inspections, and the low priority given the NPR (non-power reactor) program, [Bush] was not familiar with the previous inspection results which specifically addressed protection against radiological sabotage under inspection procedure 81455. Likewise, he was not aware of the reference in the 1980 Annual Report for the NRC (extract at Attachment F) which, as issued in March 1981, stated that "(a) all licensed non-power reactors have operative security plans as required by 10 CFR 73.40 ('Physical Protection: General Requirements at Fixed Sites') for protection against sabotage."

When asked about the various inspection reports (see Review of Reports, dated March 13, 1984) which specifically addressed protection against radiological sabotage (Virginia Polytechnic Institute and Iowa State University), [Bush] noted that the 1982 inspection of the University of Florida used the correct procedures (81N00 Series); the 1983 inspection of VPI used the incorrect procedures (81400 Series); and that the 81400 Series was correctly used during the 1980 inspection of Iowa State. However, he further advised that a current inspection there should use the 81N00 Series. The inspection report format specifies that the inspector must identify the title of the "IPs" (Inspection Procedures) under which the inspection was performed, to include a brief description of specific inspection activities. Upon further examination of the VPI report, [Bush] concluded that once the wrong procedures were used, the inspector compounded the problem by "forcing" the inspection activities under the paragraph on protection against sabotage. It was assumed by [Bush] that this was done so that the 766 System (computer program where inspectors record inspection time by Inspection Procedure) could show that all procedures had been completed. Because inspection programs and procedures are generic in nature, the proper action would have been to exclude IP81455 from the inspection report and to indicate in the 766 System that the procedure had been closed with 0% completed.

Note: A subsequent check by [Bush] with David McGuire, Region II, disclosed that the reason that the 81400 Series were used at VPI was because of the Authorized Possession Limits, rather than Actual Inventory as set forth in Manual Chapter 2545. This was the approach intended to be used prior to issuance of Manual Chapter 2545 in January 1984. Since January 1984, inspection procedures are intended to be applied based on actual possession of material not exempted under 10 CFR 73.6 (100 rem/hour at 3 feet).

It was [Bush's] view (as verified by [McKee and Ervin]) that [NMSS (Carlson)] was correctly stating the NRC position that, with the promulgation of Section 73.67, there no longer was a requirement for NPRs to provide protection against radiological sabotage under Section 73.40(a). In an attempt to explain how this position could be accommodated with the fact that there were still plans which addressed protection against radiological sabotage and inspection reports which reported on the same subject as recently as November 1983 (Virginia Polytechnic Institute), the following scenario, which includes information provided by [Bush], was presented to him for comment:

> In 1979, NMSS promulgated what became the current Section 73.67 which addressed the theft protection requirements generally raised in Section 73.40(a). NMSS viewed 73.67, with its specific requirements, as superseding the theft portion of 73.40(a). Because of the results of a classified

study, NMSS determined that with possibly very few exceptions, there was no radiological sabotage risk and, therefore, believed that that portion of 73.40(a) was no longer operative. However, NMSS did not appropriately modify or delete Section 73.40(a). As more recently argued by [NMSS (Carlson, for example)], some licensees submitted security plans using a pre-73.67 physical security plan sample. Because NMSS will accept commitments beyond that specified in the rules, the plan was approved containing the words "radiological sabotage". The issue was further complicated when NMSS, in communicating approval of the plan, directed adherence by the licensee with the plan, but with no qualification on the additional issues (radiological sabotage) included in the plan.

Under IE practice, inspectors are required to inspect "against the plan." However, any use of 81455, whether proper or improper under the existing program structure, compounded the impression that NMSS was stating one position while IE was seemingly demonstrating another via its inspection reports.

Thus, the failure of NMSS to modify/delete Section 73.40(a) and their willingness to approve security plans with no longer needed requirements while at the same time requiring adherence to the plans, coupled with the IE practice/requirement to "inspect against the plan" and the existence of IP 81455, "Protection Against Radiological Sabotage", has resulted ultimately in the conclusion by some that part of the NRC (NMSS) is saying one thing while another part (IE) is engaged in acts (reports) which clearly illustrate the opposite position.

[Bush] (concurred in by [McKee and Ervin]) agreed that the scenario did seem to explain what could have happened and further observed that he then understood how the Board, the intervenor, and this investigator could question earlier statements by the NRC staff to the ASLBP.

Attachments:
As Stated

NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription May 10, 1984

Report of Interview

Mathew D. Schuster, Chief, Security Licensing and Emergency Preparedness Section, Region V, upon interview by telephone concerning a sworn affidavit given by him on March 6, 1984, provided the following information:

Investigator's Note: In the course of the investigative matter referred to the Office of Inspector and Auditor (OIA) by Administrative Judge John Frye, a copy of "NRC Staff Response to Allegations of Misrepresentation Made by the Atomic Safety and Licensing Board," dated March 9, 1984, was obtained. As an attachment to that document, Schuster provided the above mentioned affidavit (Attachment A). Within that statement, Schuster said in pertinent part "our post 1979 inspection reports did not reflect any inspection activity for sabotage protection" (emphasis added). However, a copy of IE Inspection Report 50-139/80-03 (IE-V-392) issued July 22, 1980, had also been obtained (Attachment B). That report, which addressed an inspection conducted June 11, 1980, at the University of Washington, included "Protection Against Radiological Sabotage" as one of the areas inspected. Paragraph 13 of the report was entitled "MC 81455B-Protection Against Radiological Sabotage" and included specific comment on the same issue. This interview was conducted for the purpose of addressing the apparent contradiction between Schuster's statement quoted above and the fact of the IE inspection report's existence.

Schuster said that his affidavit was based on memory and that he did not actually check to see if his statement was correct before making it. After he pulled a copy of the 1980 University of Washington inspection report, he clarified that he signed the report for the actual inspector, W. P. Mortensen, and also signed approving it. He believed that he just didn't remember the 1980 report when he made his affidavit in 1984.

Schuster went on to explain that the substance of his affidavit was still correct because at that time, when inspections were conducted, the time had to be accounted for administratively. If the inspection required use of any of the 81400 series modules, then comments on all the modules (including 81455) had to be accomplished in order "to complete the inspection program." Accordingly, the inspectors would write something down for each module (regardless of whether the basic requirement existed) in order to "complete the inspection program." He still asserted that everyone knew there really was no sabotage protection requirement and that the administrative program of accounting for time was the driving force behind such entries. The report then became more or less mechanical with the goal of addressing all modules. More recently, reports are done by exception in that inspection modules are mentioned only when, and if, an item of noncompliance within that particular module is found.

Attachments:
As Stated

Investigation on May 9, 1984 at Bethesda, Md File # 84-9

By Ronald M. Smith, Investigator, OIA Date dictated May 9, 1984

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[Colleen Woodhead] 2/22/84
[~~Hearing~~ Attorney, OELD]

on Rusch contention

~~to~~ pages 388+389 (top of 389) knew ~~some~~ fuel emitted 100 rem/hr but not sure whether told by Miller or knew of Jan 29 letter.

told by [Miller + Carlson] told her that 73.67 applied because UCLA was meeting 100 rem/hr. requirement which was position presented at Feb 5, hearing. - doesn't ~~specifically~~ recall when she became aware of this.

does not recall when she first saw Jan 12 ltr, does not think she had seen it at this time of Feb mtg, nor was there any discussion of the subject matter, only remember met 100 rem/hr ~~re~~ requirement as to sufficient fuel so that no formula qty.

C-5b
6-1c

[Colleen Woodhead] 3/16/84

not aware of LE manual chapter

not aware of inspection reports ROJ 3/19/84

Gray also not aware
knew to notify board

didn't think of LE

up until Jan. when Bd said get experts to look at adequacy
issue was whether Contention XX should be before the board & not whether there was a plan & LE etc

C-58
B-58

U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription February 24, 1984

Report of Interview

Colleen Woodhead, Litigation Attorney, Office of the Executive Legal Director, upon interview concerning whether she had misrepresented facts or given false information to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:

As to Mr. Hirsch's (see Report of Interview, dated February 13, 1984) contention that Ms. Woodhead had offered in a December 1, 1980 argument to the ASLBP that only Section 73.67 (Title 10 CFR) applied because UCLA was a Category 2 facility, Ms. Woodhead said that she did not think that she knew at that time the meaning of the term "Category 2" facilities. She also believed that she had not made any such reference and provided a copy of the "NRC Staff Position on Unstipulated Contentions," dated December 1, 1980, in support of that position (attached).

As to the contention that Ms. Woodhead, at a pre-hearing conference held on February 4 and 5, 1981, had made the assertion that UCLA was not and never had been a Category 1 facility, Ms. Woodhead also believed that this was not the case. She provided a copy of the portion of the transcript (pages 285-491) of that conference which dealt with Committee to Bridge the Gap's (CBG) Contention XX.

In response to specific questions, she could not recall when she first became aware of the January 12 Miller letter to UCLA or the January 29 response. She did recall being told by Miller and Carlson prior to the conference that Section 73.67 applied because UCLA was meeting the 100 rem/hr exemption which was the position presented at the conference. She did not recall any discussion of the subject matter of the January 12 letter, i.e., UCLA was for a time a Category 1 facility, and as referenced above, did not think he knew of the existence of the letter at the time. (She noted that she had had a problem getting Miller to send copies of correspondence regarding the UCLA reactor to her.)

Based on her recollection and the above, she did not believe that she had ever made an assertion at the conference that the UCLA reactor had never been a Category 1 facility. She did recall putting forth the position that it was not a Category 1 facility at the time because Miller had told her of his verification by calculations that the facility was meeting the 100 rem/hr protection exemption.

Investigator's Note: A review of the documents provided by Ms. Woodhead was conducted separately and is also attached (Exhibit 1).

B-30
C-16

Investigation on February 22, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA RMS Date dictated February 24, 1984

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription February 27, 1984

Review of Documents

In the course of the interview with [Ms. Woodhead], a copy of the "NRC Staff Position on Unstipulated Contentions" dated December 1, 1980, and a copy of pages 285-491 of the transcript of the pre-hearing conference held February 5, 1981, were provided.

Pages 9-14 of the December 80 document address the Committee to Bridge the Gap's (CBG) Contention XX. A review of those pages indicates no overt reference to the University of Southern California (UCLA) reactor being a Category 2 facility. However, in Footnote 4 (page 10) a general statement is made that because of a Commission Statement of Consideration given on November 1979, "non-power reactors are subject only to Section 73.67...." Review of the referenced Statement of Consideration (attached) indicates that the quoted statement may be an overstatement. While it is clear that the Statement addresses primarily the applicability and changes to Section 73.67, it does not do so to the express exclusion of 73.40. Section 73.67 was apparently intended as an "interim" solution while safeguards requirements adequacy ware under review. It is further noted that the latest publication of 10 CFR still lists 73.40 as being promulgated under Section 161i, Atomic Energy Act (AEA) which means that willful violation of its provisions is a criminal offense under the provisions of Section 223a, AEA. In summary, the December 1, 1980, discussion appears to be based on the presumption that 73.67 is the only section at issue, particularly as to its meaning and application. There was no discussion as to the exact category of the UCLA reactor.

The transcript of the discussion of Contention XX during the February 5, 1981 prehearing conference begins at line 24, page 358 and goes to line 15, page 400. At page 377, beginning with line 16, [Ms. Woodhead] clearly states that "the only safeguard regulation that the Commission has promulgated for research reactors are contained in 73.67..." She further states, beginning at line 3, page 395, "In non-power reactors with a small amount of special nuclear material low to moderate, according to the category, they are not required to protect against sabotage or theft. They are simply required to detect unauthorized access to violators." There is no direct mention within these pages that the reactor never had been a Category 1 reactor. A scan of the remainder of the transcript also revealed no such reference.

Investigation on February 24, 1984 at Bethesda, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated February 24, 1984

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(10-82)

Attachment to Exhibit 7

Exhibit 7

U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription March 20, 1984

Report of Interview

Colleen Woodhead, Litigation Attorney, Office of the Executive legal Director, upon followup interview (see earlier interview dated February 24, 1984) concerning whether she had misrepresented facts or given false information to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:*

When shown a copy of Inspection and Enforcement Manual Chapter 2545 dated January 27, 1984, and copies of the inspection reports for the University of Florida, Virginia Polytechnic Institute, and Iowa State University (see Review of Reports dated March 13, 1984), Ms. Woodhead said that she was not previously aware of any of them. She maintained that her affidavits and presentations to the ASLBP were true and accurate to her knowledge as well as being well supported by considerable documentation.

(She noted that because of knowledge of the material cited above, she would have to notify the ASLBP of the existence of that material.)

*Ms. Woodhead was interviewed in the presence of Joseph R. Gray, Assistant Chief Hearing Counsel, Hearing Branch IV, Hearing Division, ELD, and also Ms. Woodhead's supervisor.

C-61

Investigation on March 16, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated March 20, 1984

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The allegations of misrepresentations against NRC Staff focus on repeated assertions that the UCLA reactor is not required to protect against either sabotage or theft.[1] Certain documents have been identified which appear to call into question the Staff representations. Staff has responded thereto, and what follows is an analysis of said allegations and responses, with reference to various documents.

The Sabotage Allegations

The matter about which questions of misrepresentation have been raised with regards sabotage protection has to do with repeated assertions by NRC Staff that it is "long-standing practice and policy" to not require sabotage protection for research reactors. These representations have been made numerous times over the last three years, and as recently as January 16 of this year in a pleading to the Commission[2]:

> ...the Staff believes that the Board's ruling / that research reactors must have protection against sabotage pursuant to 10 CFR 73.40/ is contrary to longstanding interpretation and practice with regard to security requirements for all licensed research reactors...

1/ See, for example, Prehearing Conference Transcript, February 5, 1981, p. 395.

2/ NRC Staff's Response to Committee to Bridge the Gap's Request for Commission Deferral of Rulemaking Pending Comments of Parties, Colleen P. Woodhead, Counsel for NRC Staff, January 16, 1984, p. 2

The misconduct questions arise out of the existence of a number of Staff documents which suggest that precisely the opposite is true: it has been longstanding interpretation and practice that research reactors must provide protection against sabotage.

The April 7, 1981, Carlson Affidavit

On April 13, 1981, the NRC Staff moved for summary disposition of Contention XX, which alleges that security against theft or sabotage at the UCLA facility is inadequate. That motion included the following representations by Staff Counsel:

> ...the only portion of the Part 73 Safeguards regulation applicable to the UCLA research reactor facility is 10 CFR 73.67.[3/]

and Intervenor's assertion that the Licensee's security plan must protect against sabotage is legally incorrect and should be dismissed.[4/]

As support for said assertions, Counsel for Staff included an affidavit from Donald M. Carlson, a Plant Protection Analyst in the NRC Physical Security Licensing Branch. Mr. Carlson asserted in his sworn affidavit that the only Part 73 regulations that apply to the UCLA facility are 10 CFR 73.37 and 73.67, specifically leaving out 10 CFR 73.40(a). He went on to say that there are no explicit NRC regulations for the protection of non-power reactors against radiological sabotage, and that preliminary results of studies performed for the NRC Staff indicate that the sabotage potential of non-power reactors is very limited and except for certain reactors, the studies suggest that "sabotage protection is probably not necessary."[5/]

3/ Motion for Summary Disposition of Contention XX, p. 11
4/ id.
5/ Affidavit at p. 4, under heading "Applicable Regulations"

Trull, Counsel for Staff asserts that there is no sabotage protection required for the UCLA reactor, supported by Mr. Carlson, who avers that 10 CFR 73.40(a) is not an applicable regulation for UCLA.

However, the transcript of a meeting with research reactor licensee (including UCLA), regarding the "Impact of the Safeguards Upgrade Rule on Nonpower Reactor Licensees" quotes Mr. Carlson to the contrary, asserting to the research reactor licensees, "What I might add, you have to protect against sabotage under the provisions of 10 CFR 73.40." (emphasis added). This would appear to directly contradict the representations by Carlson and Woodhead that sabotage protection is not required and 73.40 does not apply.

That this was not an unintentional or erroneous statement is indicated later in the transcript (p. 143), when Mr. Carlson indicates, again referring to 10 CFR 73.40, that the sabotage protection requirement "has always been here." Carlson is quoted as saying that in 1974, research reactor initial plans were submitted to protect against sabotage, as per 73.40. "...in 73.40, it says you have to protect against sabotage." Carlson goes on to describe a model security plan that the Office of Nuclear Reactor Regulation put together for Category II facilities that encompasses sabotage and theft protective measures, protecting the reactor as well as the fuel in the reactor, and "vital equipment" (what Carlson indicates is the same as "essential equipment" in the staff 1974 guidance for theft and sabotage protection.)

Thus, one has Staff telling the Board and the Commission that it is long-standing interpretation and practice to not require sabotage protection of research reactor licensees, and that 10 CFR 73.40 does not apply, whereas it is telling the licensees that the staff has required sabotage protection at least since 1974, and that "you have to protect against sabotage under 10 CFR 73.40."

Staff Response

Staff's response consists in large measure of the following points: (1) Carlson's comments at the Safeguards Upgrade Meeting were addressed to a group containing operators of research reactors of various power levels, (2) the Board agrees with Carlson's affida statement that there are no "explicit" sabotage protection requirements for research reactors, (3) Carlson's comments at the Upgrade Meeting occurred while requirements for research reactors were still in a state of flux, and that (4) there are certain Staff documents which assertedly support Mr. Carlson's latter statements found in his affidavit and Ms. Woodhead's statements found in the summary disposition motion and other pleadings and pre-hearing conference transcripts.

Analysis

(1) Woodhead's Explanation of Carlson's Upgrade Meeting Comments as Directed at Reactors of Varying Powers

This explanation of Mr. Carlson's transcript comments

Mr. Carlson, in his affidavit, disputes Ms. Woodhead's explanation of his comments by indicating that "all plans in effect at the time of this meeting were submitted to protect against sabotage." (January 10, 1984, affidavit, p. 7, e- ac Carlson says that his statement in response to Mr. Burn's question "merely identified what rules were in effect at the time of the meeting." (id.) Mr. Carlson makes no claim that his comments were directed only at some of the participants in the meeting, those of higher power, as claimed by Ms. Woodhead, and in fact states the opposite, that his comments were related to all security plans for all licensees under the rules in effect at the time of the meeting. Thus, Ms. Woodhead's explanation of Mr. Carlson's comments at the Upgrade Meeting is contradicted by Mr. Carlson himself. (It is worth noting in relation to the listing of power levels of research reactors attached to Ms. Woodhead's January 10 pleading that there is no identification of any regulation--pre- or post-1979--that requires or exempts from requirement research reactors on the basis of power level.)

(2) The Assertion that there are no "Explicit" Sabotage Protection Regulations for Research Reactors, Only General Requirements

(a) Mr. Carlson's statements in this regard were in a footnote to a section entitled "Applicable Regulations," in which he excluded the general requirement to protect against sabotage found in 10 CFR 73.40 from the list of those which he averred UCLA must comply with. Staff counsel's statements, relying on Mr. Carlson's affidavit, were that "Intervenor's assertion

that the licensee's security plan must protect against sabotage is legally incorrect..." (Motion for Summary Disposition, p. 11). The statement that there are no explicit requirements for sabotage protection of nonpower reactors in the regulations, when taken in the context of his assertions that staff viewed such protection as unnecessary, 10 CFR 73.55 applied only to power reactors, and his omission of 10 CFR 73.40(a) in his discussion of applicable regulations, was clearly designed to give the impression that there were no applicable sabotage protection regulations for a reactor like UCLA's. Mr. Carlson does not dispute this--in fact, in his second affidavit, he merely asserts that the statements in the original affidavit were correct in asserting Staff's view that no sabotage protection was required. Mr. Carlson was not saying there were general requirements but no regulations that spell out how to meet the general requirement to protect against sabotage; he admits he was saying that there was no requirement--general or specific--applicable to UCLA.

(3) Carlson's Explanation for His Upgrade Meeting Comments--That the Requirements Were in a State of Flux at the Time

The previous two explanations of Carlson's statements were offered by Ms. Woodhead, not Mr. Carlson, and, as shown above, are contradicted by Mr. Carlson's January 10 affidavit. His principal explanation of the apparent contradiction between his statements at the Upgrade Meeting that all research reactors must protect against sabotage--statements and facts he does not dispute--is that the requirements were then in a state of flux

and changed thereafter. In short, Carlson avers that his statements in 1979 that all research reactors must (and always had to) protect against sabotage under 10 CFR 73.40 and his 1981 affidavit statements that UCLA was not subject to 10 CFR 73.40 and did not have to protect against sabotage were all correct at the time made. Carlson argues that up until the Safeguards Upgrade Meeting in 1979, research reactors had to protect against sabotage and sometime thereafter (i.e., after he had made his statements that they must have such protection) the requirement changed, thus making his 1981 statement also correct when made. Unfortunately, the explanation does not stand up under scrutiny of the chronology involved.

The meeting at which Mr. Carlson made his statements about the long-standing requirement to protect against sabotage under 73.40 and how research reactors must do so ("sabotage has always been here") was held on August 27, 1979. It was held to inform non-power licensees of the new regulations that had been promulgated in connection with the Safeguards Upgrade Rule and how those new rules would impact on them. Those regulations--principally 10 CFR 73.67 (the so-called "Category II/III Rule", then known as 10 CFR 73.47)--were published as a final rule on July 24, 1979, one month before the Upgrade Meeting. No change in the regulations affecting research reactor security plans has occurred since July 1979. Thus, any comments made by Mr. Carlson in August 1979, explaining to research reactor licensees the impact of the July final rule, cannot be explained away by subsequent events. There were no subsequent events.

If one were to accept Mr. Carlson's explanation that in August 1979, telling research reactor licensees about the effect of the newly published final rules, he was correct in telling them that the new rule didn't change anything with regards sabotage because "sabotage has always been here" and "you have to protect against sabotage under 10 CFR 73.40", but that subsequent events changed that situation, one would be in a position of permitting Staff to change regulations without Commission approval, publication of proposed changes in the Federal Register, opportunity for public comment, and publication of new rule. In July, 1979, the last change in research reactor security regulations took place. In August Mr. Carlson tells research reactor licensees they must protect against sabotage; a year and a half later, in a licensing proceeding, Mr. Carlson asserts that research reactors are not required under the regulations to protect against sabotage and that 73.40 is not applicable. However, no change in the regulations took place between Mr. Carlson's August 1979 statements that sabotage is required and his April 1981 statements that sabotage protection is not required. It is not within the authority of Staff to change regulations on their own.

(4) The Assertion that Certain Staff Documents Support the Latter Carlson Statement

This assertion is put forward again in response to the Board's accusations and will be discussed in more detail below. However, it should be noted that, even were there documents supporting the latter Carlson statements, that does not explain

[illegible] statements be made [illegible] there are likewise numerous Staff documents in support.) A Board requires the full truth, not contradictory statements (one of which is not disclosed) for which contradictory documents exist.

However, the documents cited by Mr. Carlson do not support his claim that the Commission no longer requires sabotage protection for research reactors. All they indicate is that at the time that the Commission promulgated additional, specific requirements for theft beyond those already contained in CFR 73.40 for theft and sabotage, it determined that there was no need at that time to rush ahead with additional, specific requirements for sabotage beyond the requirements already in effect through 10 CFR 73.40. Mr. Carlson and Ms. Woodhead repeatedly slide over the Commission language about additional requirements for sabotage not being needed. Since Mr. Carlson now admits that at the time of these rule changes, sabotage protection was required under 10 CFR 73.40, the decision to not have additional sabotage requirements (as they were having additional ones for theft) can only mean what it says--sabotage protection requirements were in existence, additional ones would not be promulgated at this time. There is no support whatsoever for an assertion that the decision not to promulgate additional sabotage protection requirements eliminated existing requirements.

Finally, however, once again the chronology is all wrong to support the position of Carlson and Woodhead. The Staff and Commission documents cited by Carlson (which merely say

that the additional theft protection requirements being promulgated in then-73.47 were merely for theft and that similar additional regulations to those already in existence for sabotage were not being promulgated at that time) all predate Mr. Carlson's August 1979 statements. Thus, if something changed thereafter to alter the position he took at that meeting and make valid his April 1981 position that 73.40 was not applicable and sabotage protection not required by the regulations, he has no documents or other support for such a post-August 1979 change. And, as indicated above, no such change would be legal anyway, because the regulation hasn't been changed since publication as a final rule in July 1979.

SUMMARY REGARDING MR. CARLSON

The most significant aspect of Mr. Carlson's second affidavit, perhaps, is that he confirms that Ms. Woodhead's repeated assertions about long-standing Staff practice to not require sabotage protection at research reactors is not true. Mr. Carlson indicates (see especially p. 7, January 10, 1984, affidavit) that 10 CFR 73.40 was applicable to research reactors and did require sabotage protection for all such reactors from at least 1974 into at least 1979.

Ms. Woodhead's assertions that his statements at the Upgrade Meeting can be explained by the various power levels represented is contradicted by Mr. Carlson, who does not put forward such an explanation and in fact says his statement was true at the time for all research reactors.

Ms. Woodhead's assertions that he was referring only

to "explicit" regulations in the footnote in question in his first affidavit is contradicted both by the text of the paragraph in which the footnote is contained (describing "applicable regulations" as only 73.37 and 73.67, specifically leaving out 73.40) and Mr. Carlson's secord affidavit, where he confirms that he meant what the passages appear to say--UCLA is not required to protect against sabotage, and 73.40 doesn't apply. Furthermore, Ms. Woodhead relied on Carlson's statements in the first affidavit for her assertions in her motion for summary disposition that only 73.67 applies and no sabotage protection is required (be it general or specific).

Carlson's primary defense--that his statements in the August 1979 Upgrade Meeting were correct at the time, but that requirements were in a "state of flux" and changed thereafter--is contradicted by the chronology involved. His statements that "sabotage has always been here" and that "you must protect against sabotage under 10 CFR 73.40" occurred one month after the final rule was published, at a meeting designed to explain the impact of those changes, and the rule has not changed since that time.

Lastly, the defense that certain Staff documents support the April 1981 affidavit doesn't explain the contradiction with the August 1979 statements. Further, the documents all predate the August 1979 assertions which are in question, and at best indicate that the Commission did not intend in 1979 to impose additional (i.e., beyond those already in existence) sabotage requirements as part of the 1979 additional theft protection package. Since Carlson admits that sabotage protection requirements

were in existence at the time, the decision to not impose additional sabotage protection requirements cannot be used as basis for an assertion that existing requirements were abolished, particularly when that decision was made prior to the Upgrade Meeting statements indicating 73.40 having always requiring sabotage protection.

THE WOODHEAD ASSERTIONS ABOUT "LONG-STANDING STAFF PRACTICE"

As indicated above, Counsel for Staff has repeatedly asserted that it is the long-standing practice of Staff to not require sabotage protection for research reactors. And, as indicated above, Mr. Carlson's January 1984 declaration, as well as several others included in her March 9 response to the Board's accusations, now admit that it was the long-standing practice, at least late into 1979, to indeed require such protection. In fact, Ms. Woodhead herself now characterizes her prior representations as "making the continuing and consistent arguments in this proceeding that NRC regulations since 1979 have not required sabotage protection for nonpower reactors such as UCLA's..." It is worth noting that CBG cannot find in Ms. Woodhead's prior submissions and statements any acknowledgement that such regulations prior to 1979 required sabotage protection, and nowhere (in particular, in Staff's proposal to the Commission in SECY 83-500 to "clarify" "long-

The principal charge by the Board against Staff is that, despite being led to believe by UCLA and Staff Counsel that UCLA's security plan was not designed to provide protection against sabotage and that the Staff had a long-standing policy of not requiring such protection, the UCLA security plan and the Staff's security inspection reports indicated to the contrary.

Staff's response is, in brief, as follows: (1) "neither the descriptive language contained in the UCLA security plan nor the general language used on Region V cover letters for inspection reports actually contradict the representati of the Staff position concerning Part 73 regulations," (2) "the representations of this matter made by Staff Counsel have been substantiated by Staff and Commission documents over the years,"and (3) "the representations by Staff Counsel in each and every instance have been accurate, known and approved by both the Division of Safeguards and OELD."

ANALYSIS

1. The Assertions Regarding the Inspection Reports

The primary assertion is that it is only the cover letters to the UCLA inspection reports that contain reference to sabotage protection, and that this reference is because the letter is a generic one which goes to facilities that need not protect against both sabotage and theft, as indicated in the

letter. These inspections do not stand on their own.

First of all, it is clear that the references to sabotage protection are not merely in the letters of transmittal, but throughout the text of the inspection reports. For example, the October 10, 1979, letter of transmittal to UCLA by Region V's LeRoy Norderhaug includes the language pointed to by the Board: "The inspection included examination of activities related to physical protection against industrial sabotage and against theft of special nuclear material in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 73..." But this is not merely a matter of a cover letter not pertaining to the contents. Page 1 of the inspection report itself, approved by Norderhaug, indicates under "Areas Inspected":

> Security Plan; Protection of SNM; Security Organization; Access Control; Alarm Systems; Keys, Locks and Combinati Surveillance; Procedures; Security Program Review; and Protection Against Radiological Sabotage.
>
> (emphasis added)

Page 4 of the report states as follows:

> 14. MC 81455 B - Protection Against Radiological Sabotage
>
> No items of noncompliance were identified. Protection against sabotage is of concern to the licensee and is primarily effected by the security consciousness of the laboratory personnel and adherence to established procedures and policies.

Numerous other inspection reports for research reactors--UCLA's as well as others--contain the same identification of sabotage protectionwithin the areas inspected and contain the same unit examining for adequacy of said protection. In addition, throughout these inspection reports are discussions of vital

areas, vital equipment, and related specific matters tied to sabotage protection. The concern of the Board over the content of the cover letters cannot be mitigated by an assertion that the sabotage references are only in the transmittal letter and that that letter is generic. The contents of the reports deal with inspection for sabotage, of vital equipment protection, and the like.

It is next argued that the cover letters go out to different kinds of licensees, some of whom must protect only against theft, some of whom must protect only against sabotage, and that therefore the statements in the cover letters should not be taken as a Staff statement of requirement to protect against both.

First of all, of the four such letters provided, three are for non-power reactors, which thus proves nothing. The fourth is for a nuclear power plant. Mr. Norderhaug asserts in his affidavit that nuclear power plants are not required to protect against theft, being subject only under 73.55 to protect against sabotage. (His reference to exemption from 73.50 from protection of strategic special nuclear material is somewhat misleading; power reactors, of course, don't have SSNM, only SNM, but the latter must also be protected against theft.) It is the Board's point that all facilities are required under 10 CFR 73.40(a) to protect against sabotage and theft; thus Staff's assertion that the letter goes to different kinds of licensees does nothing to disprove that its statements are applicable to all licensees.

More particularly, Mr. Norderhaug's assertion that power reactors are not required to protect against theft, citing [illegible] yet get the same letter of transmittal, is contradicted by another document included in the Staff's March 9 filing. SECY 83-500, p. 2 of the "Basis for Proposed Amendment", indicates that "the response paragraph of 73.55 specifically requires prevention or impeding of both theft and sabotage."

Furthermore, all four of the sample letters of transmittal enclosed in the March 9 filing are for the year 1979-- when Staff now admits sabotage protection inspections were occurring. (See Schuster affidavit, for example.) Thus the letters of transmittal cited, which Staff claims prove that the language in such letters pointed to by the Board is not indicative of a long-standing requirement to provide sabotage protection, are for reactors the Staff now admits were being inspected for sabotage.

In short, the cover letters accurately reflect the requirements, the Staff practice, and the contents of the inspection reports. The inspection reports, cover letter and contents, thus contradict Staff's repeated representations about long-standing practice not to require sabotage protection.

2. The Assertions Regarding the Inclusion of Sabotage Protection in the UCLA Security Plan and the NRC Sample Security Plan

The NRC Staff and the Applicant both attempt to explain the fact that the first sentence of the first paragraph of UCLA's Physical SecurityPlan indicates that its purpose includes protection against radiological sabotage by stating that that language was lifted directly from a draft Sample Plan provided by the NRC Staff at the time of the promulgation of the new 10 CFR 73.67 safeguards regulations. The Staff implies that the language in the Sample Plan (and thus in UCLA's plan) was only in the introduction, and was "overtaken by events." (Carlson affidavit of March 9, p. 3). Carlson goes on to say, "It is unfortunate that the NRC Staff did not complete the development of the draft and correct it by subsequently clarifying or correcting letters to licensees since sabotage protection was deleted as a regulatory requirement."* Close scrutiny of the chronology of events related to the sample plan, however, raises serious questions about the Staff defense.

On May 24, 1978, the proposed amendments to Part 73 were first published. Public comment was taken, and on January 16, 1979 (SECY 79-38) the final rule proposal was transmitted to the Commission by Staff. According to the Affidavit of Donald Carlson (March 9, 1984), the sample plan was prepared by him from about April through mid-June 1979, subsequent to the transmittal of the final rule proposal. (Carlson at page 2-3). The sample plan bears the revision date of June 14, 1979. Sometime prior to June 28, 1979, the Commission approved the final rule for publication. (Chilk

* emphasis added

March, June 28, 1979). The final rule was published in the Federal Register on July 24, 1979. (44 FR 43280). Two weeks later, on August 9, NRR sent out the sample plan "as an aid to uniformity and completeness in the preparation of physical security plans." (Pagano letter, August 9, 1979). That letter transmitting the sample plan to licensees indicated it was being done because of the new regulations just published (10 CFR 73.47, later renumbered 73.67) and that

> Applicable non-power reactor licensees must meet these requirements for detection of theft in addition to previous regulatory requirements for protection against sabotage.
>
> (Pagano letter, emphasis added)

Pagano, Chief of the Reactor Safeguards Development Branch, went on to indicate that the sample plan was provided to assist licensees in drawing up security plans that complied with the "previous regulatory requirements for protection against sabotage" and the new 73.47 requirements for theft.

A review of the Sample Plan demonstrates that, as indicated in the transmittal letter by Pagano, it includes methods for complying with the requirements to protect against sabotage. On Page 1, the "Purpose" section lists "protection against radiological sabotage." On page 2, in the "Objectives" section, protection against industrial sabotage and detection within vital areas are both listed. On page 12, the sample plan deals with vital areas, identifying sample vital equipment as the reactor, the coolant system, the reactor controls (making the control room a vital area), primary biological shielding, and irradiated nuclear fuel. Vital areas pertain to sabotage, not theft protection (see definition of vital areas in 10 CFR 73.2(

On page 26 in the "Response Procedures" section, bomb threats, civil disorders, and industrial sabotage are all included.

Mr. Carlson, in his March 9 affidavit, explains that sabotage provisions in the UCLA plan appear to have been taken from the NRC Sample Plan, on which he worked, but that the Staff ignored in reviewing UCLA's plan any references to sabotage and did not review it for any specific sabotage protection measure "e.g., entry searches." It is important to note that Mr. Carlson's sample plan, which was designed to protect against sabotage, also did not have reference to entry searches (see p. 22). This is significant because the major substantive change between the May 24, 1978, proposed rule and the final rule as adopted around June 28, 1979, was to change the search requirements to random exit searches, eliminating entry searches. Thus, it is clear that when Mr. Carlson drafted the sample plan in the spring of 1979, he was cognizant of the final version of 73.67. Indeed, there have been no changes to 10 CFR 73.67 since Mr. Carlson wrote the Sample Plan. Thus, there is no basis for asserting that, as Mr. Carlson now claims, subsequent events "overtook" the Sample Plan and that subsequent correcting letters to licensees should have (but didn't) go out due to "subsequent" deletion of sabotage protection requirements.

The above chronology indicates that the Sample Plan--sent out to licensees to assist in preparing security plans that included, as Pagano says in the letter of transmittal, compliance with <u>both</u> existing sabotage protection requirements and the new theft protection requirements--was written subsequent to the

final version of the new safeguards rules were established

by Staff (SECY 79-38, January 16, 1979), and that it was sent out to licensees to assist them in writing up new plans subsequent to the final rule being published in the Federal Register (July 24, 1979; sample plan sent out to licensees on August 9.)

Ms. Woodhead, in her affidavit (p. 3), asserts that

> ...the descriptive sentences in the UCLA security plan exist due to an incorrect statement of purpose provided to licensees in a draft sample security plan sent to some NPR licensees for comment in 1979, prior to final development and issuance of 10 CFR 73.67... (emphasis added)

That statement appears to be false--the sample plan was sent to licensees after promulgation and issuance of the rule. It was sent, not merely for comment, but as draft guidance for complying with the new regulation and the continuing previous regulation (73.40), and correctly contained sabotage protection provisions. No subsequent events "overtook" the plan--as it was sent out after the last change in the regulations, i.e. the final version of 73.67 was published--and it was never corrected or recalled or revised. (At the August 27 Upgrade Meeting where Carlson made his statements about sabotage protection having always "been here" and having to protect against sabotage under 73.40, he refers to the sample plan and indicates that it encompasses sabotage measures, protecting the reactor as well as the fuel in the reactor, plus the vital equipment. (TR 143).)

The fact that the sample plan was a draft plan and never became a final guidance document is of little consequence. It represented the Staff position at the time, has not been altered since, and no change in the regulation has occurred since it was originally sent out to licensees. The content and timing of

preparation and release next absolutely clear that its drafters believed that sabotage protection was still required along with the specific theft protection measures required under the new 73.67.

The Pagano Letter

The key to the entire matter is the letter of Frank G. Pagano, referred to above. Pagano was Chief of the Reactor Safeguards Development Branch, Division of Operating Reactors. The subject of the Pagano letter, two weeks after the final rule was published, was "SAMPLE PHYSICAL SECURITY PLAN FOR NON-POWER NUCLEAR REACTOR FACILITIES POSSESSING SPECIAL NUCLEAR MATERIAL OF MODERATE STRATEGIC SIGNIFICANCE". The letter indicates that the Commission has amended its regulations to provide specific physical protection measures at non-power reactors and has concurrently published a regulatory guide for compliance with the theft protection provisions newly promulgated. He goes on to say:

> Applicable non-power reactor licensees [UCLA is one] must meet these requirements for detection of theft in addition to previous regulatory requirements for protection against sabotage. As a result of discussions with the non-power reactor licensees, we have drafted the attached Sample Plan as an aid to uniformity and completeness in the preparation of physical security plans.
>
> (emphasis added).

Thus, it is clear that it was the position of Staff after the publication of the final rule that the new rule did not abolish existing sabotage protection requirements, as now claimed, but was "in addition to" the existing requirements for protection against sabotage. Furthermore, that the Sample Plan,

which does indeed include sabotage protection provisions throughout it (not just in the introduction), was designed to do so. And lastly, there has been no regulatory change since then. Despite Staff claims to the contrary, the Sample Plan was sent to licensees after the final version of the rule was agreed to by Staff and approved by the Commission, not before. There were no "subsequent events" to "overtake" the Sample Plan.

One additional point needs to be made. Mr. Carlson admits that he knew of the sabotage provisions of the UCLA proposed plan; he also states that all security plans (and thus UCLA's pre-plan associated with its old license) were required to contain sabotage protection provisions and were evaluated against such. While he says he ignored the sabotage provisions of the new plan in reviewing it against his new interpretation of the new regulations, he was nonetheless aware that both the old and the new plan contained such provisions and that, in fact, the old version was required to have sabotage provisions. However, Mr. Carlson did not come forward to the Board to correct the statements made by Counsel for Applicant that UCLA's plan contained no such provisions and that low-power research reactors had never been required to have such provisions.

3. The Assertion that the "Representations of this Matter by Staff Counsel have been Substantiated by Staff and Commission Documents Over the Years"

This assertion will be examined in more depth in CBG's analysis of potential misrepresentations in SECY 83-500, which repeats many of the same arguments about the SECY documents which led up to 10 CFR 73.67 being promulgated. We have discussed them briefly above in relation to Mr. Carlson. In brief here, none of the documents cited by Staff do anything more than to show that additional sabotage protection requirements, beyond those already in effect in 73.40, were not included in the additional theft requirements being proposed in 73.67, and that it was the Staff's position that 73.67 should not be held up while Staff analyzed whether additional sabotage protection requirements should be promulgated for research reactors.

Staff now admits that sabotage was required under 73.40 prior to 1979. There is no basis for saying, as Staff does now, that the Statement of Consideration associated with 73.67 eliminated existing sabotage protection requirements. All that Statement said, and all related SECY documents said, is that additional sabotage protection requirements, beyond those already in existence, were not included within the new rule, the scope of which was exclusively additional theft protection requirements. The Pagano letter, the Sample Plan, and the Carlson statements--all after the final rule--all indicate that 73.67 was in addition to existing 73.40 sabotage protection requirements. And, of course, 73.40 was not removed.

That the intent of 73.67 was to not change the status quo with regards sabotage protection, but rather maintain it, and that 73.67 was to be in addition to 73.40, not overturn it,

is perhaps best indicated in a Staff document not provided by Staff to the Board, a memorandum from James Miller to Robert Burnett.

The Miller-Burnett Memorandum

At the time of the June 28, 1979, Memorandum to Burnett from Miller, James Miller was Assistant Director for Site and Safeguards of DOR and Robert Burnett was Director, Division of Safeguards, NMSS. The subject of the Memorandum was a new Commission paper on the "Safeguards Upgrade Rule." Safeguards at most fuel cycle facilities were being upgraded, as part of a single "Upgrade Rule"; non-power reactors were temporarily exempted from the provisions of the Upgrade Rule, but required to comply with new safeguards (primarily 73.67) being promulgated contemporaneously. During the period of the deferment, research reactors must obey the applicable interim requirements while the Commission investigated how to bring the non-power reactors under an "improved" safeguards system in the future. Miller makes clear to Burnett that until new regulations are drafted for research reactors, those with less than a formula quantity must obey 73.47 (later 73.67) and 73.40, and that "this will maintain the status quo." Thus, far from the new 73.47 eliminating existing sabotage protection requirements in 73.40, Category II research reactors must obey both. The existing 73.40 requirements were not abolished, but rather the status quo was maintained:

> As we have discussed, non-power reactors must be deferred from the Upgrade Rule. Attached is NRR and Standards final commission paper on this subject. NRR believes the deferral will be for a period of about 2 - 3 years because of the indepth studies we will be conducting. During this period, we will rely on 73.60 for those facilities with greater than formula quantities of SSNM and 73.40 and 73.47 for all others. This will maintain the status quo and closely parallels the comments of Chairman Hendrie. Also NRR will continue studying the need for a separate rule for non-power reactor facilities and commence preparing such a rule should it be determined necessary.
>
> (emphasis added)

'Thus the new 73.47 did not eliminate sabotage protection requirements in 73.40, but rather preserved the status quo, requiring--just as Carlson said at the Upgrade Meeting, just as Pagano said in his August 9 letter, just as the Sample Plan indicated--Category II facilities to protect against theft and sabotage, obey 73.47 and 73.40. (It is of note that there are no affidavits on this matter from either Burnett or Miller. Miller obviously knew of Carlson's original affidavit asserting 73.40 was not applicable, yet did not come forward to contradict it. Burnett is also quoted at the Upgrade Meeting as saying that Category II facilities had to meet the threat of sabotage. TR 56).

All of the statements of Staff position on the probable need for additional sabotage protection requirements are opinions about need for future regulations, based on the review of non-power safeguards requested by the Commission during the period where research reactors were under the interim safeguards and deferred from meeting the full Upgrade requirements. But whereas Staff may have an opinion--for example, based on

a preliminary study for the Staff--as to the degree of seriousness of sabotage threat and the need or lack thereof for additional sabotage protection requirements, those are all Staff opinions about whether changes (upgrading or downgrading) in existing sabotage protection requirements might be worth the Commission's time in promulgating. But Staff opinion about whether to change existing sabotage requirements does not abolish existing requirements--that requires a change in the regulations, which has not occurred, only been preliminarily studied.

In sum, the various Staff documents cited in support of the assertion that sabotage protection requirements were abolished in 1979 merely indicate that the status quo was being maintained and that additional sabotage protection consideration was being deferred. Numerous Staff documents from after the Commission approved the final version of 73.47 all indicate that the status quo with regards sabotage protection and 73.40 applicability was maintained. There is not a single document which says sabotage protection and 73.40 applicability was abolished.

4. The Assertion that the Staff representations have been accurate, known and approved by the Division of Safeguards and OELD.

Counsel for Staff asserts that the various representations made by her over the years in this proceeding regarding safeguards requirements have been made in consultation with numerous Staff representatives. Again, there is a chronology problem.

The primary representations made by Staff were made in a December 1, 1980, pleading, four days after entering the case,

and at the February 4-5, 1981, pre-hearing conference. None of the affiants, aside from Donald Carlson about whom questions of misrepresentation have also been raised, indicates that they consulted with Ms. Woodhead in preparation of the representa: she made at that time. All subsequent representations have merely been defenses of, and modifications to, representations she and Mr. Carlson made.

5. The Final Defense: OK, Sabotage Protection was Indeed Long Required, and Maybe 73.40 Never was Repealed, but our Statements of Staff Policy not to Require Sabotage Protection, at least post-1979, was an accurate representation of Staff Policy be the policy correct or not.

Staff now admits sabotage protection was required until 1979, that 10 CFR 73.40 did apply at least through then, and (at least affiant Schuster and Norderhaug) that the Staff did inspect research reactors like UCLA for sabotage protection at least through 1979. The only remaining defense is that, whether they interpreted the rule correctly or not, that it was indeed consistent Staff policy after 1979 to no longer require sabotage protection for research reactors (Schuster asserts a rule change in 1979 eliminated NPR sabotage requirements and inspections for sabotage protection thus stopped).

However, even this defense must be called into question by Staff's own documents.

a. Post-1979 Inspection Reports Continue to Inspect for Sabotage

Contrary to the assertions by Norderhaug and Schuster, inspections for sabotage protection at Argonaut reactors like

[illegible] continued after the 1979 rule change. A Board notification from Colleen Woodhead dated March 16, 1984, states that on that date, in an interview with an investigator for the Office of the Inspector and Auditor, she was shown:

> An inspection report for the Virginia Polytechnic Institute No. 50-124/83-01 addressing an inspection held November 28-29, 1983 which states inspection for protection against radiological sabotage was performed.

It should be noted that VPI's reactor is an Argonaut.

b. Post-1979 Inspectors Manual Continues to Instruct Inspectors to Inspect for Radiological Sabotage Protection.

In the above-cited letter, Ms. Woodhead indicates that the Office of Inspection and Enforcement Manual for research and test reactor inspections, issued only two months ago, continues to instruct inspectors to inspect for protection against radiological sabotage.

c. Post-1979 Commission Annual Reports to Congress Continue to Report Requirement for Non-Power Reactors to Comply with 73.40.

The Commission's Annual Report to Congress dated March 17, 1981, including events up to September 30, 1980, states as follows at pages 120-121:

> Status of Safeguards at Non-Power Reactors
>
> All licensed non-power reactors have operative security plans as required by 10 CFR 73.40 ("Physical Protection: General Requirements at Fixed Sites") for protection against sabotage. In addition, licensees possessing less than formula quantites of SSNM have submitted security plans in accordance with the requirements of 10 CFR 73.67...

The Report goes on to describe the provisions of the new requirement but, as indicated above, makes clear they are "in addition" to the 10 CFR 73.40 requirements for protection against sabotage.

The 1981 Annual Report similarly states the requirement to comply with the general physical security requirements of 10 CFR 73.40(a), saying that all licensees of non-power reactors have implemented those requirements, going on to discuss the process of implementing the additional 73.67 new requirements. (The 1982 Annual Report, although not as explicit, identifies no change in regulations in effect for non-power reactors from the previous two years, discussing only the new proposed amendments to 73.67 which have to this date still not been approved.)

Thus, just as pre-1979, the post-1979 situation is as follows: the non-power licensees have been inspected for sabotage protection, inspectors are instructed to inspect for such protection, and the Congress has been told that the 73.40 requirements are still in force and are being complied with. There is no documentation to support Staff's assertion that its policy has been to consider 73.40 compliance abolished post-1979 (whether 73.40 was repealed in a rule change or not) and that its policy has been to not require sabotage protection at non-power reactors. Rather, the documentation indicates that all research reactors have had to have sabotage protection at least since 1974, and continue to do so to this day.

The final Staff defense--that sabotage protection requirements for research reactorsunder 10 CFR 73.40 existed pre-1979 but were somehow eliminated during the 1979 10 CFR 73.67 rule change--thus does not bear scrutiny. Commission practice--inspections, reports to Congress, etc.--did not change after 1979.

It is important to note, however, that this Staff assertion is a new one and contradicts several years of prior representation that 10 CFR 73.40 never applied to research reactors and that sabotage protection was and is not required for such reactors. Ms. Woodhead asserts in her March 9 response to the Board's accusations of misconduct that she had made "continuing and consistent arguments in this proceeding that NRC regulations since 1979 have not required sabotage protection for nonpower reactors such as UCLA's..." (p. 7, emphasis added). She said further "...those arguments about the lack of requirements for sabotage protection for UCLA were based on counsel's analysis of the regulations modified in 1979 . . . ." (id., emphasis added)

However, nowhere in Staff's various pleadings and statements prior to the Board's accusations did Staff assert that anything had changed in 1979 regarding sabotage protection. Her previous statements were that the long-standing practice was always to not require sabotage protection for nonpower reactors, to always exempt them from 10 CFR 73.40. In Ms. Woodhead Motion for Reconsideration of August 15, 1983, she states:

"...nonpower reactors have never been subject to 73.40(a).

p. 15, emphasis a

She further stated:

> The Statement of Considerations issued with 10 CFR 73.67 makes clear that sabotage protection was and is not required for non-power reactors ...
>
> p. 11, emphasis added, footnote omi

Staff affiants now admit that 73.40 did apply prior to 1979 to all non-power reactors, that sabotage protection was required for all non-power reactors, that the long-standing Staff practice was to inspect for sabotage protection and assess security plans for said protection. (See Schuster affidavit, "Up until 1979 we inspected for sabotage protection."; Norderhaug affidavit, "Prior to 1979, when new specific regulations were issued for NPRs, the Region V security inspectors reviewed NPR facilities for security against sabotage and theft."; Carlson affidavit of January 10, 1984, " ..all plans in effect at the time of this meeting were submitted to protect against sabotage.", identifying further the requirement at that time to comply with 73.40). Ms. Woodhead now admits this(see p. 11 of her March 9 pleading), but now asserts that sabotage protection inspections were halted after 1979. As seen in her Board notification of March 16, VPI at least as recently as a few months ago was still being inspected for sabotage.

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INTRODUCTION

The Misconduct Charges

On February 17, 1984, the Nuclear Regulatory Commission's Atomic Safety and Licensing Board presiding over UCLA's application for renewal of its reactor license suspended the security proceedings in that case, charging the NRC Staff and UCLA with having made "substantial misrepresentations" regarding sabotage protection matters at issue in those proceedings and in a related rulemaking now before the Commission. The Board announced that the security proceedings would remain suspended pending resolution of the questions of misconduct.

Subsequently, on February 24, 1984, the Atomic Safety and Licensing Board (ASLB) issued a Memorandum and Order which gave Colleen P. Woodhead, Counsel for the NRC Staff, and four named attorneys for the University[1/] until March 9 to show why action should not be taken against them under 10 CFR 2.713 for violations of the Model Rules of Professional Conduct. Additionally, the Board directed others within the respective organizations of the NRC Staff and the University to indicated, also by March 9, whether they were aware of the representations being made by Counsel, whether they approved of said representations, and whether they attempted to make changes to them, the Board warning specifically that the UCLA license stood in jeopardy of suspension, revocation, or modification for statements the Board alleged were materially false. Lastly, the ASLB referred its allegations of misconduct regarding the NRC Staff to the Commission's Office of Inspector and Auditor (OIA) in connection with OIA's ongoing investigation into other allegations of misconduct by the NRC Staff related to security matters in the UCLA case.

1/ William H. Cormier, Glenn R. Woods, Christine Helwick, and Donald L. Reidhaar

The allegations are extremely serious as they call into question fundamental assertions by the NRC Staff and a nuclear licensee, representations upon which major public health and safety considerations rest. Furthermore, since the same representations have also been made by the NRC Staff to the NRC Commissioners in a proposal (SECY 83-500) that would have wide-ranging ramifications by eliminating sabotage protection at research reactors nationwide, the issue of whether material false statements have been made casts a shadow over major policy recommendations now before the Commission.

The Principal Alleged Misrepresentations

The allegations of material false statements revolve largely around repeated assertions by the NRC Staff and UCLA that it is long-standing practice and regulatory requirement to not protect against against either nuclear theft or sabotage at research reactors such as UCLA's.

The security contention (XX) in the UCLA relicensing proceeding alleges that the security at the facility is inadequate to protect against either radiological sabotage of the facility or theft of the weapons-grade nuclear materials on site.[2/] UCLA and the NRC Staff, rather than asserting that the UCLA security plan was adequate to protect against sabotage and theft, have instead repeatedly asserted that research reactors such as UCLA's are required to protect against neither.

On the sabotage matter, this position is perhaps most explicitly stated by UCLA in a pleading of August 25, 1983:[3/]

> University wishes to note that its security plan, which is not designed to provide protection against sabotage, has been approved by the Commission's safeguards branch; and that the low-power university research reactor licensee have never been required to adopt security plans designed to protect against sabotage. Surely the Commission's consistent practice in interpreting and applying its own safeguards

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2/ The UCLA nuclear material is primarily uranium enriched to 93% U-2

3/ "Response in Support of NRC Staff Petition for Reconsideration of the Licensing Board's Memorandum and Order Ruling on Staff's Motion for Summary Disposition."

regulations to licensees such as University is entitled to considerable weight in this proceeding.

(emphasis added)

Numerous statements by the Staff contain similar assertions. At the prehearing conference of February 5, 1981, for example, Staff asserted that there was no requirement that such non-power reactors protect against either sabotage or theft.[4/] In its Motion for Summary Disposition of Contention XX (Security) of April 13, 1981, Staff made the same argument, supported in part by an affidavit from Donald M. Carlson, a Plant Protection Analyst in the Division of Safeguards. In its August 15, 1983, Petition for Reconsideration of the Licensing Board's Memorandum and Order Ruling on Staff's Motion for Summary Disposition, Staff again states that sabotage protection was never required for research reactors under the regulations (p. 11 and 15).

The Board's February 24, 1984, Memorandum and Order accusing Staff and Applicant of misrepresentations on this issue cited numerous other instances in which similar assertions were made, including most recently in SECY 83-500, a Staff proposal dated December 6, 1983, asking the Commission to change the safeguards regulations to reflect what Staff asserts is "long-standing policy" of not requiring sabotage protection for research reactors. And as recently as January 16, 1984, Counsel for NRC Staff Woodhead asserted to the NRC Commissioners[5/] that requiring, as the Board has done, at least some measure of sabotage protection

> "...is contrary to longstanding interpretation and practice with regard to security requirements for all licensed research reactors..."

By insisting that these "threshold" issues be resolved before the security plan was even reviewed and the matter set for hearing, three years of delays ensued. (Because of the manner in

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4/ See, e.g., TR 394-395. Staff and UCLA have repeatedly claimed that no protection against theft of UCLA's weapons-grade uranium was required, only the ability to detect the theft and report material is missing!

5/ Staff's Response to CBG's Request for Commission Referral of

which the "timely application" rule of 10 CFR 2.109 has been applied to date in the UCLA case, any such delay elongates the time during which possession of Special Nuclear Material is permitted, even though the license has expired and no affirmative safety finding has issued.[6/])

In May, 1983, the ASLB resolved the sabotage protection threshold issue. Citing the long history of sabotage protection rquirements applicable to non-power reactors, the Board ruled that some such measures must be required at UCLA. The Board based its ruling, in part, on the Appeals Board decision in Trustees of Columbia University (4 AEC 349; 1970), which required sabotage protection measures for the Columbia University research reactor, as well as the subsequent promulgation in 1973 of 10 CFR 73.40 which requires sabotage protection by regulation. 10 CFR 73.40(a) states:

> Each licensee shall provide physical protection against radiological sabotage and against theft of special nuclear material at the fixed sites where licensed activities are conducted. Physical security systems shall be established and maintained by the licensee in accordance with security plans approved by the Nuclear Regulatory Commission.
>
> (emphasis added)

Thus, despite three years of Staff and Applicant arguing that UCLA's plan contained no sabotage protection provisions and was not required to, the Board ruled that both legal precedent and the Commission's regulations required such protection. The threshold issues resolved, the Board therefore ordered the security plan and related documents turned over and the hearing process to commence on the security issues UCLA resisted turning over the security plan and related documents such as Staff inspection reports, indicating it wished to "expurgate" certain portions. CBG objected, fearing UCLA would attempt to

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6/ CBG has had pending since January 9, 1984, a motion alleging violation of the timely application rule and the necessity of license suspension, a motion solicited by the Board if the December 10, 1983, deadline it had set for an end to the delays was not met.

remove from the documents evidence embarrassing to the University's position, and demanded that the unexpurgated versions be provided at least to the Board. The documents were provided on January 31, 1984, and the Board thus reviewed the security plan and Staff's security inspection reports for the first time in mid-February. Until that time, the Board had relied on representations made by Counsel for Staff and Applicant that the plan contained no sabotage provisions and that Staff required no sabotage protection at the facility. As the Board stated the situation that existed prior to its review of the security documents:

> Throughout these proceedings until February 15, 1984, we had been led to believe by Counsel that, first, Staff saw no requirement in the regulations that UCLA provide such /sabotage/ protection and imposed no such requirement, and second, that UCLA's security plan indeed provided no such requirement.
>
> Memorandum and Order, February 24, 1984 at 3

On February 15, 1984, the Board reviewed the UCLA security plan and the NRC Staff's reports of security inspections of the UCLA facility. In light of the years of representations to the contrary by Counsel, the Board states it was "astounded" by what was contained therein:

> We were astounded to read in the first sentence of the first paragraph of the text of UCLA's physical security plan that it was indeed the purpose of the plan to provide "...for the protection of the reactor, protection of the staff and the general public against radiological sabotage and to prevent and detect theft of Special Nuclear Material."
>
> Order at 6, emphasis added

The Board went on to indicate that the general performance objectives of the physical security system and organization, listed in the text of the plan, include protection of the reactor, its equipment, and the nuclear material from acts of radiological sabotage. (Order at 6). The Board further indicated that a review of the plan's contents identified several provisions aimed

at providing sabotage protection, and that it appears that "it has been the purpose of the plan to provide such protection from the time of its submittal to NRC on March 10, 1980", nearly four years ago. id at 6-7. 7/

As to the NRC Staff's repeated representations to the Board and to the Commission (via SECY 83-500), that it is the long-standing Staff practice to not require sabotage protection at research reactors, the Staff's reports of security inspections of the UCLA facility also were contrary to Staff's repeated assertions:

> We were even more astounded to find that every Part 73 / the security section of the NRC regulations 7/ security inspection report furnished by UCLA indicates that Staff did, in fact, examine UCLA's activities related to physical protection against sabotage "in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 73."
>
> Order at 7, emphasis added

Thus, for three years the Board had been told by Staff and Applicant that the Board did not have the authority to assess the adequacy of sabotage precautions at UCLA because there was assertedly no such requirement. As support for their assertions, UCLA claimed that Staff had approved its security plan even though the plan had no sabotage protection in it, and Staff claimed it had never enforced such a requirement for UCLA. However, review of the plan itself and Staff's own reports of its compliance inspections for the facility appear to indicate both assertions were materially false.

7/ The Board also noted (at p. 7) that the Staff was aware of the contents of the UCLA security plan and, in fact, on November 9, 1983, amended UCLA's existing license to require UCLA to implement all of its provisions. As the Board stated, "Thus Staff formally required UCLA to take steps to provide for protection against radiological sabotage on that date." (emphasis in original). Staff affiant Carlson states in his affidavit of January 10, 1984, that all security plans submitted prior to 1980 were required to contain protection against sab otage. Therefore, the previous UCLA plan, in effect until November 1983, likewise contained sabotage protection provisions and was required by Staff to comply with same.

As the Board summarized the situation in its Memorandum and Order (p. 6) :

> It was thus clear to us, based on the representations of Counsel, that UCLA's physical security plan was not designed to provide protection against sabotage and that Staff did not require that such protection be provided. However, the security plan and security inspection reports furnished by UCLA indicate that the opposite is true.
>
> (emphasis added)

Faced with Staff and Applicant representations which, when checked against their own documents, were found to be at odds with the truth, the Board stated:

> In light of these revelations, we are confronted with the question whether Counsel may have violated Model Rules of Professional Conduct 3.1, 3.3, 3.4, and 8.4 and whether we should take action against Counsel purusuant to 10 CFR 2.713.
>
> Order at 7

The Board gave Counsel until March 9 to demonstrate why such action should not be taken against them, and stated further:

> In addition, the Board wishes to know to what extent the written representations of these attorneys have been reviewed and approved by others within their respective organizations. The parties are reminded that 10 CFR 50.100 provides in part that "/ a / license ... may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application for the license or in the supplemental or other statement of fact required of the applicant...."
>
> Order at 7-8

Therefore,the Board directed,

> The Regents of the University of California and the NRC Staff are to indicate, by March 9, 1984, the extent to which they were aware of the representations being made by counsel, whether they approved of these representations, and whether they sought to make any corrections to them.
>
> Order at 8

Additionally, as to the allegations of misrepresentations on the part of the NRC Staff,

> We have referred these matters to the Commission's Office of Inspector and Auditor in connection with their ongoing investigation.

The "ongoing investigation" by OIA of NRC Staff referred to by the Board deals with allegations of misconduct summarized below.

The Earlier Allegations of NRC Staff Misconduct

On December 23, 1983, the Atomic Safety and Licensing Board referred to the NRC's Office of Inspector and Auditor for its investigation three matters brought to its attention by the Committee to Bridge the Gap, Intervenor in the proceeding, based upon NRC Staff documents obtained under the Freedom of Information Act, documents which appeared to directly contradict Staff representations on the security issue:

(1) Despite sworn statements by Staff affiant Donald Carlson in an April 7, 1981, affidavit that research reactors like UCLA's were not required to protect against sabotage nor to comply with 10 CFR 73.40, a transcript of an August 27, 1979, meeting arranged by NRC Staff with representatives of research reactor licensees, including UCLA's, quotes Mr. Carlson himself as repeatedly saying just the opposite.

(2) Counsel for NRC Staff Colleen P. Woodhead failed to disclose to the Board and parties a letter from Staff to Applicant confirming CBG's allegation that UCLA was a Category I facility by virtue of the amount of special nuclear material on site, and thus subject to the safeguards requirements of 10 CFR 73.60 and 73.67. During the same period, Staff Counsel was asserting to the Board that UCLA was a Category II facility and thus subject only to the less stringent security requirements of 10 CFR 73.67. And,

(3) Despite sworn statements by Staff affiant James Miller[8/] in an April 8, 1981, affidavit that he had personally verified that the fuel at the UCLA facility was exempt from certain security requirements to protect against theft by virtue of the fuel's radiation levels, a letter from UCLA to Miller and a memorandum from Miller to others within the NRC Staff indicated that UCLA could not meet the irradiation exemption.

The Matter of Staff Misrepresentation to the Commission in the December 6, 1983, Proposal to Eliminate Sabotage Protections Nationwide (SECY 83-500)

Included in the Board's February 24, 1984, Memorandum and Order accusing Staff and Applicant of "substantial misrepresentatio were assertions by the Board that these misrepresentations included statements found in SECY 83-500, a Staff proposal to the Commission to overturn the Board's decisions on sabotage and effectively eliminate such sabotage protections for all research reactors nationwide. That Staff representations to the Commission on a policy matter of such seriousness raises grave questions.

8/ James Miller was at the time Chief of the Standardization and Special Projects Branch in the Division of Licensing.

Prior to the disclosures of the various documents which call into question the veracity of the representations made by Staff and Applicant, the Board ruled against both on legal grounds. Memorandum and Order of May 11, 1983, LBP-83-25A, 17 NRC 927 (1983). Tracking the history of sabotage protection requirements for research reactors back to the 1970 Columbia decisions and the codificati of that requirement in 1973 at 10 CFR 73.40, the Board ruled that it is the long-standing requirement that research reactors take some measures to protect against sabotage.

After the Staff petitioned for reconsideration, the Board adhered to its prior ruling that 10 CFR 73.40 requires sabotage protection for research reactors and has for a decade. LBP-83-67, 18 NRC ___, (October 24, 1983). In response to Staff's assertion that it had recently been provided with a study suggesting that "...no significant consequences would result from sabotage of the Argonaut-UTR [the model of reactor at UCLA],"[9/] the Board stated:

> If this is so, Staff should take appropriate steps to obtain Commission approval of an amendment exempting Argonaut-UTR's from the protection-against-sabotage requirements of 73.40.
>
> Order of October 24, 1983, at 11 (emphasis added)

Unless and until 10 CFR 73.40 were amended to exempt Argonaut-UTR's from its requirement that all research reactors be protected against sabotage, the Board ruled that UCLA, like all other research reactors, was bound by the Columbia University decision and the provisions of 10 CFR 73.40.

9/ CBG has recently obtained under the Freedom of Information Act a copy of the study referred to by the Staff, and will soon be releasing a technical critique thereof, which concludes that the study is fundamentally flawed, relying on release fractions and leak rates orders of magnitude too low, invalidating the conclusions.

The Staff, however, claiming to be acting on the Board's suggestion, proposed a rulemaking that would overturn the Board's interpretation of existing sabotage protection requirements, rather than consider exempting, as the Board had suggested (if Staff were convinced of the technical basis for such action), Argonaut-UTR's from the existing requirements. The Staff, in its proposal to the Commission, represented the Board's statement as follows:

> The Board based its decision solely on its reading and interpretation of the regulation as written. The Board went further to suggest that, if policy and practice differ from the Board's interpretation, the Commission should amend the regulation to be consistent.
>
> SECY 83-500, p. 2, emphasis added

This representation of the Board's statement is a far cry from the actual Order, which ruled that it is the long-standing requirement, from Columbia in 1970 to the present, to protect research reactors from sabotage, and if the Staff had a new study indicating Argonaut-UTR' like that at UCLA should be exempted from the requirements of the regulations, such an exemption must be added to to the regulation. The Staff proposal to the Commission states that its explicit purpose is to overturn the Board's interpretation of 10 CFR 73.40--see SECY 83-500, p. 1, for example--yet this is done in the guise of a rulemaking "clarification" instead of an appeal.

Besides the Columbia decision and the recent ASLB rulings, numerous Staff documents suggest that SECY 83-500 contains substantial misrepresentations, particularly in its assertion that it is the long-standing practice and policy to not require sabotage protection for non-power reactors. As indicated above, the security inspection reports for UCLA contradict that assertion. Annual reports by the Commission to the U.S. Congress contradict that assertion. Mr. Carlson's statements at the Safeguards Upgrade Meeting with non-power reactor licensees contradict that assertion.

Numerous items of Staff correspondence with licensees, Staff generic security plans for research reactors, and many other Staff documents contradict these Staff representations made to both the Board and the Commission, asserting that the long-standing practice is to not require sabotage protection, and that 10 CFR 73.40 does not apply.

For example, the Commission itself informed the U.S. Congress in its 1980 Annual Report just the contrary:

> All licensed non-power reactors have operative security plans as required by 10 CFR 73.40 ("Physical Protection: General Requirements for Fixed Sites") for protection against sabotage.
>
> p. 120-121, emphasis added

The Staff is now telling the Commission in SECY 83-500 that it has been long-standing policy to interpret 10 CFR 73.40 as not requiring sabotage protection for non-power reactors. Either the Staff is misleading the Commission or the Commission misled the Congress.

That the problem lies with the Staff is suggested by numerous other documents. For example, Mr. Carlson, the Staff Plant Protection Analyst whose 1981 affidavit asserting no sabotage protection was required has since been called into question, said at the Safeguards Upgrade meeting with non-power licensees:[10/]

> What I might add, you have to protect against sabotage under the provisions of 73.40.
>
> Transcript, p. 56

Later in the same transcript, Carlson is asked whether sabotage protection requirements were coming in the future.

10/ "Impact of the Safeguards Upgrade Rule on Nonpower Reactor Licensees," August 27, 1979, Glen Ellyn, Illinois

Carlson responded:

> Sabotage has always been here. In 1974, your initial plans were submitted to protect against sabotage. You have to follow the provisions of 50.35C which tells you that you have to follow 73, Part 73, and in there, in 73.40, it says you have to protect against sabotage...
>
> Transcript, p. 143
> (emphasis added)

And, in response to the ASLB's charges and the OIA investigation, Staff affiants now admit that it was the long-standing practice and policy, at least into 1979, to require sabotage protection at non-power reactors. (See, for example, affidavits of Norderhaug and Schuster, appeneded to "NRC Staff Response to Allegations of Misrepresentation Made by the ASLB," dated March 9, 1984, as well as Carlson's January 10, 1984, affidavit, at p. 7).

Thus, the accuracy and veracity of the representations made by the Staff to the Commissioners in SECY 83-500 that it is long-standing practice not to require sabotage protection of research reactors and that 73.40 is not applicable to research reactors are thus under a substantial shadow.

The Potential Injury Associated With Such Misrepresentations is Serious

The damage caused by such misrepresentations are severe:

(1) They have undermined the proceedings on security, delaying for three years determination of whether the security at this nuclear facility in a densely populated area is sufficient to protect public health and safety ,

(2) the misrepresentations could have prevented all review of the adequacy of the security at the facility in question

had the Atomic Safety and Licensing Board been convinced that adequate sabotage protections were not required,

(3) resolution of the security issues prior to the Olympics, portions of which are to be held at UCLA and which represent a period of intense risk of sabotage to the reactor, may have been made impossible by the delays (see below),

(4) a proposal to the Commission to abolish sabotage protections at research reactors nationally, which could have far-reaching consequences if approved, may well be based on misrepresentation and material false statements, and

(5) misrepresentation threatens the integrity of the entire proceeding.

If representations by Staff and Applicant cannot be depended upon to be accurate, complete, and reliable, then there is no trustworthy evidence from either of these parties upon which a safety determination can be made. The entire past record, as well as any future representations made by Staff or Applicant in this case, are called into question by these allegations of misconduct.

The Olympics: A Clock Ticking

UCLA is to be one of two Olympic Villages during the summer Olympics, housing Olympic athletes and hosting a number of the athletic events. The UCLA reactor, a few hundred yards away from the center of these activities, has widely been cited in press accounts as a likely target for terrorists at the Olympics. (See, for example, Newsweek, June 27, 1983).

On December 14, 1983, CBG moved the ASLB to order a shutdown of the reactor so that fuel could cool for potential off-shipment prior to the Olympics to prevent acts of sabotage during the Olympics. This action was needed, CBG asserted, to preserve

the Board's ability to order such off-shipment at a later date should it find such action necessary. Delays in permitting the security issue to reach hearing made it possible that there would be insufficient time to order such a remedy, due to the lead time necessary for making shipment arrangements. They delays in resolving the security contention were occasioned by UCLA's and Staff's insistence on resolving,prior to any hearing being scheduled, the "threshold" issue of whether sabotage protection was even required--a matter which is now alleged to have been based on material false statements. Thus, misrepresentations on the sabotage issue may result in grave injury due to the delay they produced, a delay that may make impossible resolution of the security issues prior to the period of greatest risk--the Olympics.[11/]

11/ On January 18, 1984, the Board denied the motion for precautionary shutdown and commencement of shipment preparations, questioning its authority to do so prior to completion of evidentiary hearings on the security issues. The Board, indicating it was cognizant of the risks associated with the rapidly approaching Olympics, pledged, however, to expedite said hearings:

> We thus officially notice the level of terrorist activity and the steps being taken in this country to prevent it recently reported by the press / footnote omitted/, as well as the unfortunate fact that Olympic Games may provide a focus for such activity. The UCLA Argonaut is located in the midst of the 1984 Olympic Games. Consequently, we will expedite our consideration of Contention XX to the maximum extent possible so as to reach a timely resolution.
>
> Order at 5-6, emphasis added.

Ironically, a month later the Board suspended all action toward resolving Contention XX pending resolution of the misconduct charges it had leveled against Staff and Applicant. (Memorandum and Order of February 24, 1984, at 1).

After the Board denied CBG's motion for precautionary actions to be taken now to preserve its power to rule at a later date on the Olympics matter, California Assemblymen Gray Davis and Mike Roos intervened, requesting UCLA Chancellor Young to shut the reactor down prior to the Olympics and place concrete barriers outside and hire guards at a minimum, and preferably to remove the fuel and eventually convert to non-weapons-grade replacement fuel.

(footnote continues on next page)

The Questions to Be Resolved

There are a number of questions raised by the allegations of material falsehoods that need to be resolved:

(1) Did Counsel for the NRC Staff and/or UCLA, and/or members of their respective organizations, make representations that were misleading or materially false?

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footnote 11 continued/ On February 2 it was discovered during annual maintenance at the reactor facility that the control blade system had been malfunctioning for some time and was in violations of the provisions of the Applicant's Technical Specifications. All operations of the reactor were suspended, pending resolution of the problem. A week later a prehearing conference occurred at the reactor, but the Board and parties were not notified of the development. A week after that, UCLA responded to CBG's January 9 motion for curtailment of activities at the facility, but once again failed to notify the Board or parties that the reactor's activities were currently curtailed. In early March, Applicant finally did provide said notification, with the statement that the reactor would be shutdown until repairs--which would entail core entry--had been completed.

On March 8, the University announced that the reactor would be shut down during the Olympics for security reasons, and agreed to certain of the other requests of Assemblymen Davis and Roos--barricades and an unspecified number of guards. At a press conference on March 9, Chancellor Young conceded, in response to media inquiries, that the reactor was already shut down dur to the control system failure and would remain shut down through the Olympics and perhaps beyond.

The shutdown--be it due to control blade malfunction or response to public concern about a security problem during the upcoming Olympics--does not resolve the security issues nor reduce the need to resolve said matters well in advance of the Olympics. Shutdown only affects the inventory of short-lived isotopes: the public exposures due to release of isotopes such as strontium-90 and cesium-137, as in arson or an explosion involving incendiary devices, would remain unaffected by shutdown. Furthermore, shutdown increases the theft risk from now on and will increase the ability to gain access to the fuel for destructive purposes due to the fuel being removed from the core while repairs are being performed.

Thus, while the University's concessions to the public regarding Olympic security are a step in the right direction, they do not obviate resolution of the outstanding security issues prior to the Olympics nor, in CBG's view, the need to off-ship the fuel at this stage. In certain key respects the announced situation makes matters worse. Therefore, the delays occasioned by Staff and Applicant representations about sabotage and related requirements, the veracity of which have now been called into question by the Board, have made it very much an open question whether the adequacy of UCLA's security can be resolved prior to the Olympics--a period of

(2) Did Counsel or others associated with either party fail to disclose facts that were material to the matter at issue?

(3) Were Counsel or other members of their respective organizations aware of material false statements, and if so, did they attempt to correct them?

Material False Statement Include Omissions, Do Not Require Knowledge of their Falsity

In considering the above three questions, it is important to keep in mind that "material false statements," as the term is used in the Atomic Energy Act, includes omissions of material facts, and furthermore, does not require scienter (i.e., knowledge of the falsity of the statement) for the statement to be "materially false" within the meaning of the statute. The case law on this matter will be discussed in more detail in a following section, but it is clear from a public policy standpoint (i.e., the protection of public health and safety, and the common defense and security) whether or not material misrepresentations on matters of such gravity were made intentionally is of little consequence. If misrepresentations occurred, decisionmakers (both the Commission and the Board) who are charged with tremendous responsibility in making decisions to protect the public weal cannot carry out that statutory responsibility. Decisions injurious to the public result when decisions are based on misrepresentations--whether due to intent or incompetence or some other factor. Thus the excuse that an individual whose representations were false had failed to review the document about which he or she was making representations is of little consequence--decisionmakers were relying upon these individuals for accurate representations of fact, which were assertedly being given.

However, the charges levelled by the Board against Staff and Applicant raise an additional, serious question--whether the material falsehoods were intentional, i.e. were designed to mislead the Board. Both questions must be resolved; either alone is very

period.

In this case, misrepresentations resulted in three years of delay during which an allegedly grossly inadequate security plan was in place without examination or resolution of its inadequacies--and without any such resolution in sight. A licensing board could have made decisions of grave injury to the public based on the misrepresentations. The Commission may yet make incorrect decisions about the matter nationwide based on misrepresentations in the Staff proposal (SECY 83-500) to eliminate sabotage protection requirements in the guise of "clarifying" long-standing practice. IT IS CBG AND THE PUBLIC, AS WELL AS THE PROCESS ITSELF, WHICH ARE THE PARTIES INJURED BY SUCH MISREPRESENTATION AND DELAY.

Continuing Objection to the Delays

It is ironic that the one sanction imposed to date has been to further injure CBG and the public--by suspending and thus further delaying resolution of the outstanding security issues.

The Board has accused the Applicant and the NRC Staff with misconduct and misrepresentation, which, if true, have delayed unnecessarily resolution of important security issues in the case for three years, making it more and more difficult to resolve those matters prior to the Olympics. The only action the Board has taken to date is to suspend--a month after pledging to expedite--the security proceedings, an action that rewards the Applicant charged with misconduct and further injures CBG, the victim of the alleged misconduct.

We note that the licensee maintains Special Nuclear Material (SNM) on site now, and has throughout the pendency of this proceeding, without the adequacy of its protection resolved. The longer said proceeding is delayed, the longer the Applicant charged with misconduct may possess the material for which it is requesting the license--even though its original license expired long ago.

To date it remains CBG and the public who are the injured parties, and the suspension of the proceeding (without accompanying license suspension) rewards the accused. CBG maintains a continuing objection to these delays and the rewarding thereby of Applicant and injuring thereby CBG and the public who must bear longer the risks of a facility whose license has expired and whose safety and security remains unproven.

The Analysis to Follow

Thus, the NRC Staff and UCLA have both been accused of substantial misrepresentations about key security matters. Each has responded with its arguments why the sanctions indicated by the Board--action against Counsel pursuant to 10 CFR 2.713 and license suspension, revocation, or modification pursuant to 10 CFr 50.100--should not be imposed. These responses have included argument, affidavits, and documents. An analysis of the adequacy--and veracity--of the Staff and Applicant responses follows in subsequent sections.

In the case of the NRC Staff, it did at least respond to the Board Order, by and large, with affidavits from individuals from within the Staff's organization, as required by the Order. The principal problem with the Staff's responses is that numerous documents contradict and directly call into question the veracity and accuracy of the assertions contained therein. These matters are detailed and analyzed in subsequent sections.

As for UCLA's filing, its primary problem is that UCLA has failed to comply with the Board Order. Two of the four named attorneys directed by the Board to provide affidavits failed to do so; none of the Regents directed by the Board to respond did so; and none of the key individuals within the licensee's organization who could be expected

to know of the documents contradicting the assertions of counsel (e.g., Mssrs, Ostrander, Wegst, Barber, Catton, among others) have responded at all. Furthermore, the response from the one individual other than the accused counsel who did respond, security officer Ashbaugh, failed to directly answer the questions posed by the Board--whether he approved of Counsel's representations or attempte to make changes to them. CBG provides some of the information omitted from the UCLA response in the analysis thereof provided in the sections that follow.

The charges against Staff and Applicant are serious, the injury already occasioned is significant. At stake is the integrity of the entire proceeding in the UCLA case, and of the Commission's rulemaking consideration regarding Staff's proposal to eliminate research reactor sabotage protections. Thorough analysis of the allegations and the responses thereto, and presentation of information which sheds light on these matters, is essential.

5/3/84 [illegible]

THE MILLER 1981 REPRESENTATIONS

Introduction

James Miller submitted an April 8, 1981, affidavit for the NRC Staff in which he swore that he had "verified" that the UCLA reactor fuel was irradiated over 100 Rem/hour and therefore exempt from the requirements of 10 CFR 73.60. Certain other documents obtained under the Freedom of Information Act indicate that UCLA had informed Miller that it could not meet the 100 Rem exemption, and that Miller had informed other members of the NRC Staff that UCLA could not meet the 100 Rem exemption.

Miller's primary defense is as follows: (1) that the documents which contradict his April 1981 affidavit, while true, predate said affidavit, (2) that statements that UCLA "could not" meet the 100 Rem exemption merely indicated that UCLA "was not" meeting that level at that particular time, (3) that UCLA changed its operations in January of 1981 so as to meet the 100 Rem exemption, and (4) that he, with the assistance of Robert E. Carter, performed calculations prior to his affidavit that verified the irradiation level of the UCLA fuel.

A review of the chronology and certain underlying documents calls into question Mr. Miller's explanation, as detailed below.

The April 1981 Representations

Mr. Miller's affidavit states in pertinent part: (1) that he has "personally toured" the UCLA reactor facility and can stated "from my own observation" that the security program complies with the applicable requirements of the regulations, which he defines as 10 CFR 73.67 (i.e., for less than a formula quantity of SNM), (2) that "I can of my own knowledge, state that UCLA does not have on site the quantity of special nuclear material described in 10 CFR 73.60" and that therefore 73.60 does not apply to UCLA, only 73.67, (3) that "I have personally observed" the security

arrangements at the facilty and "can state from my own knowledge" that there is not ready access to rooms containing vital equipment or special nuclear materials and (4) that "I have verified that the irradiated fuel in the UCLA reactor core emits radiation such that the dose at three feet will be in excess of 100 Rems per hour and that the design of the reactor makes accessibility to that fuel very difficult." (emphases added).

In short, Miller stated under oath that he had personally inspected the UCLA reactor facility and could, from his own knowledge and personal observation attest that the amount of SNM on site is less than that identified in 10 CFR 73.60 and that the irradiation level of the fuel is in excess of 100 Rem per hour.

However, certain documents later obtained under the Freedom of Information Act appear to contradict Mr. Miller's sworn statements.

The Miller to Stello Memorandum

This memorandum from Miller to Victor Stello, Jr., Director, Division of Operating Reactors, indicates that "we have visited twenty-two non-power reactor licensee facilities (28 reactors) to assess their capability to meet the requirements of the proposed Category II/III Rule." Miller went on to indicate that he had previously told Stello that six licensees would be affected by the "Upgrade" rule because they possessed formula quantities of unirradiated special nuclear materials. However, Miller, went on, further examination of then-current and then-proposed safeguards rules resulted in identification of 27 reactors that could come under the "Upgrade" rule because of their inability to maintain fuel elements at 100 Rem per hour. A list of those reactors was attached to the memorandum--UCLA was included.

Miller explained that the then-current regulations (pre-1979) exempted all irradiated fuel, in or out of core, regardless of irradiation level, and thus the twenty-three licensees identified were not currently required to provide the physical protection associated with possession of formula quantities of SNM. However, Miller went on, that exemption would be eliminated with the publication of the "Upgrade" rule, and those twenty-three licensees would then indeed have to provide the protection required for formula quantities. Their only alternative, he indicated, "would be to irradiate and maintain the material to a self-protecting level." (emphasis added). (Note that the fuel, to be exempted under the new rules, must both be at a self-protecting level while being irradiated, and must be able to maintain that level, i.e. even when not being irradiated. This will become key when examining the Miller-Carter calculations asserted to have "verified" that UCLA's fuel was self-protecting.)

Miller went on to say, however, that the alternative of exempting these particular reactors by virtue of self-protecting fuel could not be accomplished because the fuel elements (key, not the whole core as assumed in the Miller-Carter calculations, but the individual elements, as the rule clearly states) for these reactors, including UCLA's, "cannot attain or sustain" the 100 Rem irradiation level:

> As we now see the situation, the fuel elements associated with these reactors cannot attain or sustain a total external radiation dose rate in excess of 100 rems per hour at three feet; therefore, these non-power reactors will come under the "Upgrade" rule.
>
> (emphasis added)

On the basis of his assertion that UCLA, and 22 other non-power facilities, cannot either attain or sustain fuel element dose rates of 100 Rem per hour at three feet, Miller recommended that non-power reactors be removed from the proposed upgrade rules

and separate rules be prepared for non-power reactors.

Thus, based on visits to 28 non-power reactors, Miller wrote Stello asserting that UCLA and numerous other listed non-power reactors cannot meet the 100 Rem exemption and thus had no alternative but to come under the proposed Safeguards Upgrade Rule for facilities with formula quantities of SNM, which he proposed not apply to non-power reactors but rather a special rule for them.

If UCLA could not meet the 100 Rem exemption, could not attain or sustain 100 Rem per hour for its fuel elements, as indicated in Miller's memorandum recommending exemptions for UCLA and similar research reactors from the proposed requirements for facilities with formula quantities of SNM, then how could Miller in his 1981 affidavit claim UCLA not only could but was attaining and sustaining dose rates in excess of 100 Rem per hour and thus was exempt from the rules for research reactors with formula quantities of SNM? One cannot have it both ways, it would appear.

The Miller-Brown Letters

On July 30, 1979, at the time of publication of the Upgrade rules, Mr. Miller wrote to Harold Brown, Environmental Health and Safety Officer, UCLA, regarding protection of the SNM at the UCLA reactor facility. The letter begins as follows:

> Your reactor facility license authorizes you to possess special nuclear material (SNM) of types and amounts that exceed the "threshold" quantity defined by 10 CFR Part 73, § 73.1(b). Authorization limits will establish physical protection requirements under 10 CFR 73.47 and the Safeguards Upgrade Rule. The maximum possession limit will mandate that you comply with the requirements of the proposed safeguards upgrade rule. . .
>
> (emphasis added)

Thus Miller informed UCLA (1) that its license authorized it to possess in excess of a formula quantity of SNM, (2) that authorization levels (not possession amounts, as later claimed by Staff Counsel and implied in Miller's 1981 affidavit) would determine required physical protection under the new rules, and that (3) UCLA's possession limit "will mandate that you comply" with the upgraded safeguards rules for formula quantity facilities. This would appear to contradict Mr. Miller's statements (and Ms. Woodhead's) that UCLA was, by virtue of the amount of SNM, not subject to the rules for facilities with formula quantities (note that UCLA's shipment getting the asserted amount of SNM below 5000 grams, and the subsequent amendment to the license authorization level, did not occur until considerably after Miller's affidavit.)

Miller went on in the letter to UCLA to indicate that the Staff had been directed to determine for the affected licensees the status of physical protection at each, whether the impact of the new rules might be closure, and what plans were being taken to implement the upgrade rule. To do so, Miller asked UCLA to answer a number of questions regarding the additional costs to the facility if losing the exemption for all irradiated fuel (only exempting 100 R fuel) forced them to comply, as indicated earlier in his letter, with the Upgrade Rule. Miller also specifically inquired about the capability of meeting the 100 Rem/hour exemption:

> 15. With 100 r/hr at 3 feet exemption criteria, can you meet and maintain the SNM at such a level continuously? What would the impact be on current financial and operating resources? How would it maintain the self-protection criteria affect fuel replacement and costs therefore?

Brown responded:

> 15. It does not seem possible to meet the 100 r/m /sic/ at 3' at all times for the reactor fuel. The impact of the upgrade rule would result in prohibitive costs if unfavorably interpreted in our case.
>
> (emphasis added)

Brown indicated that it was not UCLA's intention to possess greater than a formula quantity of non-exempt SSNM "because greater amounts would entail financial costs, manpower requirements, and restrictions which could not be met at this facility." He went on to say that UCLA had "three alternatives":

a. Ask for a variance on the 3.6 kgs of SSNM in the core of the reactor due to the difficulty in retrieving it from the reactor.

b. Store the 4.6 kgs of non-irradiated SSNM elsewhere off-site.

c. Remove all the irradiated fuel from the reactor and send it to ICRP for reprocessing and place the non-irradiated fuel in the reactor.

Thus, UCLA was informed by Miller in 1979 that it had a formula quantity of SSNM and would have to comply with protections for such a level. UCLA responded that it wasn't possible to meet the 100 rem exemption criteria, and that UCLA was not prepared to assume the financial costs, manpower requirements and other restrictions which possessing a formula quantity under the new regulations would entail, and that (if it couldn't get a variance for the fuel in-core because of reactor design considerations[1/]) its only options were to remove either the irradiated or the non-irradiated fuel from the site to get below the formula limit as newly redefined.

Miller therefore had told Stello UCLA couldn't meet the 100 Rem/hour limit and would be significantly burdened if it must meet the new requirements, and UCLA's Brown told Miller that it wasn't possible for UCLA to meet the 100 Rem criteria and that its only options to avoid the burden of protecting a formula quantity were offshipment of fresh or in-core fuel. BUT A YEAR BEFORE FRESH FUEL WAS OFF-SHIPPED, MILLER IN HIS SWORN AFFIDAVIT ASSERTS UCLA COULD AND WAS MEETING THE 100 REM EXEMPTION AND HAD AN AMOUNT OF SNM LESS THAN A FORMULA QUANTITY.

1/ Variances for Argonauts because of supposed difficulty getting access to the core due to the concrete blocks atop the core are not permitted under the current regulations but are being considered in the proposed amendments to 10 CFR 73.67 out for comment.

Miller's Defense

Miller defends the apparently contradictory statements as follows:

(1) His statements that UCLA could not meet the 100 Rem exemption were true when written,

(2) These statements all predate his April 8, 1981, affidavit,

(3) UCLA subsequently increased its operations so as to comply with the 100 Rem exemption,

(4) and Miller and a colleague "verified" this by "independent calculation" prior to submitting his affidavit to that effect.

Analysis

The 1979 Statements and the 1981 Affidavit Cannot Both Be Correct

Mr. Miller told the Commission, in an effort to prevent the Upgrade Rule from being applied to non-power reactors, that these reactors could not attain or sustain the 100 Rem exemption. He did not say that these reactors were not currently meeting the 100 Rem exemption but that they were capable of meeting the exemption with a minor scheduling alteration. He said just the opposite--that these reactors, UCLA's included, were not capable of meeting the 100 Rem exemption and therefore would face the choice of closing or of tremendous additional expense if forced to comply with the Safeguards Upgrade Rule.

Miller slides over this distinction in his second affidavit when he talks of documents which he and other members of the NRC Staff authored "which state that UCLA and other nonpower reactors did not or could not meet the 100 rem exemption." (emphasis added). The documents do not say that these reactors did not meet the 100 rem level, but could; they said just the opposite, that these reactors could not meet the exemption. Both statements--that UCLA could not meet the exemption and that UCLA was meeting the exemption--cannot be true.

If Mr. Miller and other members of the NRC Staff merely meant, as he now claims, that these reactors could but weren't meeting the exemption, rather than what the statements plainly say, that these reactors couldn't meet the exemption, then he and his colleagues were making misleading statements to the Commission on important matters of policy. The assertions that these reactors could not meet the 100 rem exemption were made in support of Staff arguments that they should be exempted from the Upgrade Rule or would otherwise have to shut down. If, as Miller now claims, these reactors could indeed meet the exemption via scheduling changes, then the Staff recommendation to the Commission was misleading and dishonest. There was thus another option than reactor shutdown or tremendous expenditure to meet the Upgrade Rule, and that was scheduling modification. There would thus be no basis for Staff's recommendation to exempt research reactors from the Upgrade Rule if indeed Mr. Miller's new assertion were correct--that these reactors weren't meeting the 100 rem level but could by a change in scheduling. His new assertion would make a mockery of the Staff assertions to the Commission, which argued precisely that the only option was to exempt the reactors from Upgrade because they were not capable of being exempted under the 100 Rem rule.

Explanation at Variance with the Documents

Miller now asserts that there is no contradiction between saying that UCLA, and numerous other research reactors, "did not or could not" meet the 100 rem exemption and then saying that UCLA did and could meet the same exemption. This is patently ridiculous.

The documents make perfectly clear that Miller was told by UCLA that it could not sustain the dose rate for the exemption, and therefore had no option but reduce fuel holdings or get another exemption based on some other factor than 100 Rem. The Brown letter to Miller was most explicit--"It does not seem possible " to meet the 100 rem exemption. Brown wasn't saying that UCLA wasn't currently meeting the exemption but could; he said UCLA couldn't possibly meet the exemption, and thus had no option but to obey the upgrade rule or reduce the fuel loading. This is made clear in the next sentence of the Brown answer, saying that because it wasn't possible to meet the 100 rem exemption for the fuel at all times, "The impact of the upgrade rule would result in prohibitive costs if unfavorably interpreted in our case."

Miller's own memorandum to Stello makes the same point, and likewise contradicts Miller's current attempt to explain away the previous statements. Miller had been asked to assess what impact, if any, the proposed Upgrade Rule could have on nonpower reactors in the future if enacted. He reports that they would have to come under the Upgrade Rule (which he indicates would be a burden from which they should be deferred) because they would lose the current exemption for fuel that was irradiated no matter what the irradiation level. He says :

> The only other solution would be to irradiate and maintain the material to a self-protecting level. As we now see the situation, the fuel elements associated with these reactors cannot attain or sustain a total external dose rate in excess of 100 rems per hour at three feet; therefore, these non-power reactors will come under the "Upgrade" rule. The only immediately foreseeable solution is to remove non-power reactors from the proposed safeguards rules and concurrently prepare a separate physical protection rule for non-power reactors.
>
> (emphasis added)

Miller thus, in the very memorandum in question, indicates that the only solution to prevent research reactors from having to comply with the Upgrade Rule is to defer them specifically from it, because the "only other solution" (to irradiate and maintain the material to a self-protecting level") cannot be done by these reactors. Obviously, if they could meet the exemption by modification to schedule, then deferral from the Upgrade Rule would not be, as he asserts, the only solution.

More particularly, it is clear from the memorandum in question that Miller is talking about the future, not the present, as he now claims. The verbs are all in the future--actions that could be taken in the future to keep these reactors from having to comply with Upgrade. He is not saying that these reactors now were not meeting 100 Rem--he says the only other solution to the prospective loss of the exemption for all irradiated fuel, no matter how highly irradiated,"would be to irradiate and maintain the material to a self-protecting level."-- a future action which must be maintained to meet the exemption. His very next sentence says these reactors cannot take such a future action because they are not capable of it.

It is thus clear from the very documents in question that Miller's new argument does not hold. He was not merely saying that these reactors could but weren't meeting the exemption--he was saying very clearly that these reactors were not capable of meeting the exemption and thus had no option except to meet the Upgrade Rule or be generically deferred from it. There would be

no purpose whatsoever to either Brown's memorandum to Miller or Miller's memorandum to Stello if the issue were merely whether UCLA were meeting, at the time of the memo (before the new regulations were to go into effect) an exemption not then applicable. The issue was clearly Brown telling Miller, in response to his inquiry, that UCLA had no option but to meet the Upgrade Rule or reduce inventory because it was not possible to meet the 100 Rem exemption, and for Miller to tell Stello that research reactors had no option but to be deferred from the Upgrade Rule because they could not take the action of irradiating the fuel and maintaining it to meet the 100 Rem exemption. If Miller's current interpretation of his past statements were correct, then he made misrepresentations to Stello (and through Stello to the Commissioners) when he said there was no option but to defer nonpower reactors from the Upgrade Rule because they could not meet the 100 Rem exemption. If they weren't but could, as he now asserts, then there was another option, and no need for deferral. Either Stello and the Commission were misled by Miller, or the Board.

Miller himself more or less admits that he was not merely saying the reactors did not meet the exemption but could--he says in fact in his January 9, 1984 affidavit that his previous statements were that UCLA and similar licensees "did not or could not" (emphasis added) meet the exemption. If the licensees could meet the exemption by altering scheduling, then Miller misled Stello and the Commission when he said they could not and they had no option but to comply with the Upgrade Rule or be generically deferred from such compliance.

Mr. Miller's defense of the contradiction is further eroded by review of other documents.

The Denton/Gossick Memorandum to the Commissioners

Based apparently on the Miller-Stello memorandum, a memorandum went to the Commissioners. From Harold Denton, thru Lee Gossick, with Jim Miller listed as the contact, the memorandum

was entitled "Report on the Self-Protection Criterion."

The memorandum first discusses the technical bases for the 100 rem exemption, concluding that "it is doubtful that the stated dose rate would be a deterrent to such a group [the then-current characterization of potential adversaries]." (id. at 20. The memorandum goes on to repeat language from the Miller to Stello memorandum about how the Safeguards Upgrade Rule removes the exception for lightly irradiated fuel, leaving only as exempt fuel which is over 100 rem/hour. The memorandum then repeats and expands upon Miller's previous assertions that these reactors cannot maintain the 100 rem exemption, concluding, "The self protection capability of the non-power reactors is tenuous." (emphasis added). The memo lists a number of potentially affected reactors, including UCLA's, saying that the dose rate from irradiated fuel from non-power reactors is "frequently less than 100 rems per hour at 3 feet." The memo indicates further that even if some non-power reactors were operated solely to irradiate the fuel to obtain the self-protection exemption, an extended shut-down will result in decay below 100 rem and subsequent loss of the self-protection exemption, and thus these facilities, even with operation solely to meet the exemption, would nonetheless be unable to maintain it and "would be required to meet the requirements of the Safeguards Upgrade Rule." (id. at 4). Repeating that most of the non-power reactors are in a "tenuous situation in maintaining the self-protection capability", the memorandum concludes that they would be forced to comply with the Upgrade Rule:

> The impact of the requirements of the Safeguards Upgrade Rule on the 23 affected non-power reactors [UCLA is listed as one] would be severe. The financial expense alone of the upgrade requirements alone would force many of the affected non-power reactors out of operation.

Thus, it is clear that when the Commission was told that the self-protecting capability of fuel at reactors such as UCLA's was "tenuous," the Commission was being told that therefore these reactors would have no option but to obey the Upgrade Rule or be forced out of operation by the costs of the new Rule. The Commission was

not being told, as Miller would now have one believe, that these reactors currently were not meeting the requirement but were capable of maintaining it were their operational schedules to change, but were in fact being told the opposite--that even if operated solely to attempt to meet the 100 rem level, these reactors could not maintain that level because of the effect of any extended shutdown, and therefore the reactors would have no option but to close their facilities or bear the expense of the added security. It was on that basis that the Commission was advised to defer compliance with the Upgrade Rule for non-power reactors. If Mr. Miller's current explanation were indeed correct, the Commission based that policy decision on misleading representations by Staff.

The Catton-Reid Letters

On July 30, 1979, Robert W. Reid, Chief, Operating Reactors Branch #4, wrote to UCLA regarding the new safeguards regulations that had been published in the Federal Register on July 24, regarding theft protection for nonpower reactors. Reid indicated that the new regulations for research reactors "exempts SNM that can be maintained continuously at self-protection levels of 100 rem/hour at three feet." (emphasis added). Reid therefore requests from UCLA information about its fuel needs and its ability to meet the exemption by maintaining continuously the 100 rem level.

On August 29, 1979, Ivan Catton, Director of the Nuclear Energy Lab, responded in a letter to Mr. Reid. Catton told Reid that UCLA required approximately 9.0 kg of SNM (3.6 in core, 4.7 cold SNM in storage, and .7 kg lightly irradiated in storage pits then awaiting shipment), and concluded:

> ...none of the above mentioned material can be exempted by the 100 rem/hr at 3 feet criterion.

This latter statement, confirming that of so many other documents and contradicting that of Miller's 1981 affidavit, responds directly to Reid's notification of the new rules and need to amend Technical Specifications to establish surveillance requirements for measuring

irradiations levels of exempted fuel. Catton responded that none of UCLA's fuel can be exempted, thus no surveillance requirements were necessary. UCLA was not able to avail itself of the 100 rem exemption, so no surveillance procedure for fuel irradiation level was needed.

SECY 79-187C

The key to the entire matter is SECY 79-187C. Miller claims that what the Staff said in 1979 is that UCLA wasn't meeting the 100 Rem exemption with current scheduling, but could if operations were altered. As indicated above, the documents contradict said assertion, and in fact, if that were the Staff's intention, then its recommendations that the Upgrade Rule be deferred or many reactors would have to be shut down because they were not capable of meeting the exemption would be absurd.

That the clear language in the communications between UCLA and Staff, and between Staff and the Commissioners, means precisely what it says--that it was not possible for UCLA to attain and sustain 100 Rem/hour--is made totally clear in SECY 79-187C.

The memorandum indicates that the Commission, in response to the Staff recommendation in July of 1979 that nonpower reactors be temporarily deferred from complying with the full Upgrade Rule and in the interim meet new 73.47/.60 requirements, requested the Staff report back with information about how long the nonpower reactors should be deferred from the Upgrade Rule. In SECY 79-197C, the Staff reports back on those issues, indicating that some reactors (in the 2 MW range) could meet the 100 Rem exemption but couldn't maintain it during periods of maintenance, etc. The Staff indicates, however, that there were seven other reactors who have an authorized possession limit that would put them in Category I:

These seven cannot maintain fuel at above 100 rem/hr exemption id. at 3

UCLA is listed as one of the seven.

Enclosed with SECY 79-187C is a table, Table I, entitled "Licensee Ability to Keep Fuel Self-Protecting (Above 100 Rem/Hr)." The table divides reactors into two basic categories--- can't maintain 100 rem/hr., and can maintain it. The latter category is further subdivided into two subcategories: can maintain 100 rem/hr. exemption with normal operations, or with extra effort. Thus, the Staff reported to the Commission on 22 nonpower reactor facilities, categorizing them as able to maintain the 100 rem exemption, or unable. The determination of ability to maintain the exemption was based on whether the reactor could maintain the exemption with normal operations, or with extra effort (e.g., with changed scheduling).

If Mr. Miller's current explanation--that these Staff documents merely meant that UCLA wasn't meeting the exemption at its then-current schedule of operation, but that it was capable of meeting the exemption if it changed said schedule--is truthful, then UCLA should be listed in the column of Table I marked "Can Maintain 100 Rem/hr Exemption With Extra Effort." HOWEVER, THE STAFF LISTED UCLA IN THIS COMMISSION PAPER AS INCAPABLE OF MAINTAINING THE 100 REM EXEMPTION, EITHER WITH NORMAL OPERATIONS OR WITH ALTERED SCHEDULE IN WHICH EXTRA ATTENTION IS PAID TO MEETING THE EXEMPTION.
The Miller explanation that UCLA altered its schedule in January 1981 thus becoming "capable" of meeting the exemption evaporates when SECY 79-187C is reviewed, because it makes clear, just as the other documents do, that UCLA was incapable, irrespective of scheduling alterations, of maintaining the 100 rem exemption. UCLA can't maintain 100 rem--either with its then-current normal operations, or with altered operations. Miller's 1981 statements to the contrary are thus false, if he asserts that Staff pre-1981 statements were true.

Miller Defense #2--All Inconsistent Statements Predate April 1981 Affidav

As indicated at length above, even were this excuse correct, it would be irrelevant, because the prior inconsistent statements clearly are at variance with the later statements in the affidavit. The Staff was told by UCLA, and the Staff told the Commission that it was not possible for UCLA to maintain the 100 Rem exemption. In 1981, Miller tells the Board that UCLA is maintaining the 100 Rem exemption. One or the other must be false.

However, Miller's argument that the situation changed and his April 1981 affidavit is thus not contradicted by prior inconsistent statements hinges also upon his assertion that all the contradictory statements were prior to the 1981 affidavit. That is false.

SECY 81-376 (June 12, 1981) Postdates the April Affidavit, and Contradict

Continuing the review begun at Commission direction regarding the 100 rem exemption and related matters for research reactors, the Staff reported back to the Commissioners on June 12, 1981--two months after Mr. Miller's affidavit, more than four months after UCLA supposedly made the operating scheduling changes. At page 2 of Enclosure C of SECY 81-376, the Staff discusses the UCLA situation explicitly with regards its ability to maintain fuel radiation doses of 100 rem/hour. The Staff states explicitly--after Miller's affidavit--

> When the /UCLA/ reactor is occasionally shut down for periods of three days or greater, the irradiation levels drop below the exemption threshold for short periods of time. This 3.6 kg unexempted fuel /in the core/ in combination with 4.6 Kg 93% enriched U-235 unirradiated fuel locked in a vault (which is considered contiguous site) would raise the amount of SSNM on-site to a formula quantity.

Staff goes on to examine whether "credit" in a new regulation (the proposed revisions to 10 CFR 73.67 currently out for comment) should be given due to supposed difficulty in gaining access to the core due to the concrete plugs on top of the core. Such credit would be permissit

would be permissible under the proposed new regulation but remains impermissible under the current regulations--those in effect at the time of the Miller affidavit.

THUS, MONTHS AFTER THE SUPPOSED CHANGE AT UCLA AND THE MILLER AFFIDAVIT, STAFF DOCUMENTS STILL WERE CONSISTENT--UCLA COULD NOT MAINTAIN THE 100 REM EXEMPTION.

Note that the Commission was told by the Staff that UCLA fell below the 100 Rem level any time there was a shutdown of three days or longer. Note that Mr. Ostrander, in his calculations regarding dose rate for his fuel, assumed average shutdowns of seven days--a two hour run at the beginning of the week, then no operations until the beginning of the next week. UCLA, in its interrogatory answers of August 9, 1982, (#13), states the only change that took place in January of 1981 is that UCLA paid additional attention to ensuring that the reactor ran an <u>average</u> of two full power hours per week. Thus, <u>every</u> week, week after week, the reactor was in violation of the 100 rem level four out of seven days, over half the time.

That the memorandum to the Commission took into account new developments at UCLA is indicated by the fact that the memorandum states that the storage "vault" is considered contiguous site--which Miller informed UCLA of in mid-January, and two weeks later came UCLA's pledge to maintain 100 Rem exemption--which UCLA and Miller had both previously stated was not <u>possible</u> for UCLA, <u>could not</u> be met, and which months later the Staff informed the Commission remained impossible to maintain for UCLA. THUS MILLER'S DEFENSE THAT ALL CONTRADICTORY STAFF DOCUMENTS PREDATE HIS AFFIDAVIT IS FALSE.

Miller Defense #3--UCLA Increased its Operations in January 1981 To Meet the 100 Rem Exemption

Miller now asserts that his inconsistent statements on the ability of UCLA to maintain 100 rem per hour can be explained by an asserted change in operations of the UCLA reactor that occurred assertedly in January 1981. Miller says UCLA was not meeting 100 rem per hour before January 1981 but did maintain that level after that date by modification to the operating level. Unfortunately, there are no data or other documents to support that assertion; what records exist contradict it.

Miller provides no support for his assertion that he verified operations were changed at the reactor sufficient to now make the reactor capable of reaching and maintaining 100 rem per hour for the fuel. All he now puts forward is a single sentence in a UCLA letter of January 29, 1981, which asserts, without any specifics, that UCLA will temporarily schedule reactor operations to conform with the self-protection criteria. However, a reading of his April 1981 affidavit gives the unmistakable impression that Mr. Miller had personally confirmed that the fuel was self-protecting. The original affidavit begins by saying Miller "personally toured" the facility, that he "can state from my own observation" the facts asserted in his affidavit, "can of my own knowledge" assert that UCLA does not have the amount of material described in 10 CFR 73.60, and so on. In fact, Miller now tells us that his personal "verification" consists of having received a letter from UCLA with a one-sentence pledge to operate the reactor (without specifics) so as to meet the 100 Rem exemption that both UCLA and Miller previously said was not possib

Miller provides no basis for his assertion that UCLA was now meeting 100 Rem when it wasn't before, due to change in operation. He indicates no acquisition of data as to what that supposed operation change was.

Operations Actually Decreased After January 1979:

Miller asserts now that he was correct to say that UCLA was not (or could not) meet the 100 Rem exemption prior to January 1981 because its operational intensity was not sufficient to do, but after that time operations were so changed as to maintain 100 Rem. Miller's second affidavit indicates he relied on the single sentence, unspecific pledge in UCLA's January 1981 letter for that assertion. He appears to admit, therefore, that he did not verify that matter, as implied in his original affidavit, but merely accepted the UCLA pledge. (Calculations of dose rates based on assumed operating schedules, of course, do not verify said schedules are indeed taking place. That is done by checking operating records.)

Miller's original affidavit gives the strong impression that, during his personal tour of the reactor he took measurements of the reactor fuel irradiation dose rate. He now says he did no such thing (in fact, his tour took place in the summer of 1980, prior to the supposed change, during a period in which the reactor was, by his own admission, not meeting the 100 Rem exemption). Miller now says he independently verified the dose rate of the UCLA fuel only by calculation, from Washington. Those calculations are based upon an assumed operating schedule, for which Miller indicates no action to verify that said assumed schedule was actually taking place--i.e., was anything more than hypothetical. His April 7 affidavit is instructive:

> I have verified that the irradiated fuel in the UCLA reactor core emits radiatin such that the dose at three feet will be in excess of 100 rems per hour and that the design of the reactor makes accessibility to that fuel very difficult. In addition, UCLA has committed to schedule reactor operations to maintain the self protection of the fuel in the reactor core.
>
> (emphasis added)

Note that these are two separate sentences, with the transition "In addition...". Miller, after a long discussion of his personal tour of the reactor facility, his personal knowledge that it doesn't have more than a formula quantity, says that he has verified the dose rate for the fuel. In addition (i.e., on independent grounds), he

says, UCLA has promised to schedule operations such as necessary to maintain the dose rate he has independently verified. HOWEVER, IT IS NOW CLEAR FROM MILLER'S 1984 EXPLANATIONS THAT HIS "VERIFICATION" WAS BASED SOLELY ON THE SUPPOSEDLY INDEPENDENT UCLA PLEDGE TO MAINTAIN 100 REM. He calculated that UCLA, if it operated at an intensity he assumed (but did not verify) for his calculations, fuel bundles would be less than 100 Rem per hour and even the entire core would fall below 100 Rem per hour after 2.3 days of shutdown (more on this below). But Miller's current assertion that the contradiction between his prior statements and his 1981 affidavit is due to changed operating schedule for UCLA rests solely on the single sentence pledge in UCLA's January 1981 letter: "We are scheduling reactor operations to conform with the self-protection criteria for the in-core fuel."

Had Miller "Verified" the Matter, He Would Have Discovered Operations Declined After January 1981

As indicated above, Miller's April 1981 affidavit gives the strong implication he personally measured the dose rate of the fuel during his site tour. He now says his "verification" was solely done by calculation in Washington. For the "verification" to be a "verification", and to be "in addition" to UCLA's pledge to change operating schedules, he would have to have independently at least determined the input numbers for his calculation. In particular, he would have had to independently verify the scheduling intensity--the first step in the calculation. However, he now says only that UCLA pledged without specifics to have enough operations to maintain 100 Rem. How then could he come up with an assumed operating schedule to even begin his calculation? As will be discussed below, it appears he and his colleage Mr. Carter simply picked a number out of the air--2 full power hours every 2.3 days. Yet the affidavit gives the Board the impression he verified the dose rate himself.

It is true that the operating intensity assumed by Miller and Carter (2×10^5 sec.--picked because it was a nice round number?)* would have indeed have been an increase in operational intensity for the UCLA reactor, as asserted by Miller now. However, he did not, as claimed, verify the matter. Had he, he would have known that the number picked out of thin air was considerably in excess of the actual operating intensity for the reactor in question, and, in fact, impossible, given weekends, quarter breaks, holidays, and so on.

Miller's assumption--a minimum of 2 full power hours, followed by a maximum of 2.3 days shutdown, represents a minimum of 6.1 full power hours per week, each and every week, evenly spaced every 2.3 days apart, for a minimum of 6.1 x 52 = 317 full power hours per year, evenly spaced throughout the year. THE ANNUAL REPORTS SUBMITTED BY UCLA TO THE NRC INDICATE THAT 317 FULL POWER HOURS PER YEAR IS GREATER THAN THE OPERATIONAL INTENSITY AT ANY TIME IN THE LAST DECADE INCLUDING THE 1981-1982 PERIOD CLAIMED BY MILLER TO HAVE INVOLVED A CHANGE IN OPERATIONS TO MEET THE 100 REM CRITERIA. Miller's personal verification of UCLA's dose rate is based on data he did not "verify" as claimed and which are not true as claimed.

More important, perhaps, is that the actual data demonstrate that Miller's assertion that he verified that operations changed to meet the 100 Rem exemption is false. Operations did indeed change in 1981 at the time specified by Mr. Miller--they decreased. What follows are operations data from UCLA's annual reports to the NRC:

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* The "increased" operating intensity assumed by Miller for UCLA is found at page 3 of the Carter typed calculations: 2 hours of irradiation time at 100 kw, followed by 55.6 hours of shutdown decay, or 2×10^5 sec, or 2.3 days.

YEAR	1979	1980	1981	1982
EQUIVALENT FULL POWER HOURS	294	289	239	185*

Note that the change that took place in 1981 was downward, not upward; that operations after Miller claims operations changed were less intense than in the years previous, years in which Miller admits UCLA didn't meet the 100 Rem exemption.

These summary data are taken by UCLA from its operating logs for the reactor, logs available to the NRC for independent verification, verification Miller clearly wishes the reader of his April 1981 affidavit to believe he conducted, if not actual measurements

In short, Miller's statement that operations changed after January 1981 to reverse his previous statements that UCLA could not meet the 100 Rem/hour exemption appears false. Furthermore, it appears quite false to assume, as his 1981 affidavit does, that he personally "verified" the dose rate of the UCLA fuel. He was wrong about its schedule (falsehood one) and did not "verify" the dose rate (falsehood two). As will be seen below, his assertions based on his "calculations" were likewise false.

Miller Defense #4--Verification by Prior Calculation

As indicated above, the Miller 1981 affidavit is clearly misleading in that it implies Miller, as part of the personal tour and out of "personal knowledge" referred to repeatedly throughout the affidavit, measured the dose rate of the fuel. In particular, he says in paragraph 5 of the original affidavit that he "can of my own knowledge" state that UCLA does not have the quantity of special nuclear material described in 73.60. He now admits he had no such personal knowledge, he took no such measurements, and that his "personal knowledge" and "verification" consisted of calculations performed in Washington based on an assumed, unverified, operational changed schedule.

CBG has repeatedly protested in this proceeding about opposing parties making conclusory statements in sworn testimony or affidavits but shielding the factual basis for said statements. CBG has often demonstrated the falsity of the conclusory statement when the supporting documentation is finally made available and scrutinized. This problem--which damages beyond measure the evidentiary record upon which a Board is to make judgment--is reinforced by examination of the "calculation" Miller now puts forward as basis for his conclusory statements about having personally "verified" the dose rate for the UCLA fuel.

The Carter written calculation is dated April 14, 1981, one week after the Miller April 8 affidavit. Miller claims that the calculations were actually performed prior to his affidavit; it is clear, however, that at least one of the calculations described in said April 14 was not available at the time of the Miller affidavit, as Carter indicates in the last two pages that information from UCLA's Neill Ostrander and his calculational method were not obtained until 10 April, two days after Miller's affidavit. Clearly none of that information could be used in support of the April 8 affidavit.

What Do the Calculations Say?

Calculation 1, based on Williamson's "method for estimating the dose rate at three feet from an irradiated MTR-type fuel element" (emphasis added, p. 1) is discussed in the first two pages, however no calculational result is reported. Note that the Williamson method (created under contract for NRC for determining compliance with 10 CFR 73.60) is based on individual fuel elements--as the regulation is written (radioactive material not readily separable from other radioactive material). This will be discussed below, but note that Carter and Miller immediately violate the method by switching to consideration of dose for whole core rather than individual fuel elements, as required by the Williamson method and the regulations.

Miller and Carter then modify Williamson's assumptions, but conclude nonetheless (p. 3) that the dose rate per fuel element is 11.9 rem/hour--clearly in violation of 10 CFR 73.60.

The assumptions used, as mentioned above, are two hours of operation at 100 kw, with decay time of 55.6 hours, said (falsely) to be "appropriate for the UCLA operations."

Page four of the calculations, in the version obtained by CBG under FOIA, indicates two lines have been blocked out in the sentence "In Williamson's derivation; it was assumed that a flux of 5×10^5 MeV-s^{-1} cm^{-2} is equivalent to one rem-hr^{-1}..." What follows is unknown, as the same material appears to have been removed from the version provided the Board. Does it, as CBG suspects, relate to the fact that Williamson's method calculates dose per bundle, as required by the regulation? Williamson's own descriptions of the proper calculational method, supposedly relied upon here by Miller and Carter, indicate that the dose rate for the UCLA fuel elements would be less than 1 rem/hour.*

Method V is a description of Neill Ostrander's calculation, provided to Miller by phone two days after Miller's affidavit. Ostrander told Miller UCLA assumeda single two-hour run at 100 kw, and that the dose for the full core would drop to 40 rem per hour one week later, and down to 26 rem per hour the following week. Ostrander further indicated that the full core could be at 100 Rem/hour if the reactor operated 200 kw every Monday without interruption. This assumed operational intensity is one third that assumed by Miller in the calculations on which he based his affidavit--thus if he had used the operation history told him by Ostrander on the 10th in the calculations he was relying upon on the 8th, his conclusion would be UCLA couldn't meet the 100 Rem level, even assuming the whole core.

---

* See, e.g., "Self Portection Criteria for Research Reactor Fuel" by T.G. Williamson, August 1981, p. 7, indicating 1.5 MW-d/kg U-235 in past 18 months = 1 rem/hour. UCLA has 3.5 kg, operates less than 1 MW-d/kg per 18 months; Williamson thus indicating doses of 1 rem/hr

In other words, Miller and Carter said UCLA could meet the 100 Rem exemption (assuming it applied to the whole core rather than individual elements, as required by the regulation) if UCLA had increased its operating pattern to six full power hours per week, evenly spaced at 2.3 day intervals. Two days after submitting the affidavit, Miller is informed by Ostrander that UCLA is assuming an operating schedule of only two full power hours per week, one third the level assumed by Miller and less than the operational level in 1979 when Miller had concluded UCLA couldn't meet the 100 Rem level. BUT MILLER DID NOT CORRECT HIS AFFIDAVIT WITH THE NEWLY-RECEIVED INFORMATI Miller had been told by Ostrander two days after his affidavit that the calculations were based on an erroneous assumption about three-fold higher than actual operating schedule. Miller did not correct assertions he now knew to be false. While it is true that Ostrander's calculation indicated 100 Rem/core could be maintained if the reactor ran every Monday, but would not be maintained if that did not happen (i.e. for vacation or maintenance or malfunction), Miller's independent verification indicated that UCLA's core would go below 100 Rem if the reactor did not run 2 full power hours with a shutdown of only 2.3 days. Miller's conclusion--that a shutdown of 2.3 days puts UCLA over the 100 Rem level--meant that the moment he learned from UCLA that its actual operating schedule was with far larger shutdowns than 2.3 days (infact, shutdowns of at minimum a week), he had an ironclad obligation to inform the Board that the statements he made in his affidavit were not correct, based on the information he receivec from Ostrander two days later. Miller's "independent calculations" asserting that a 2.3 day shutdown led to violation of the 100 Rem level, coupled with the new information from Ostrander that UCLA was actually assuming a schedule of 7 day shutdowns, meant that Miller's independent method demonstrated, with the Ostrander scheduling information, that the conclusions asserted in the Miller affidavit were false.

It remains a mystery how Miller and Carter could assume a 2 full power hour schedule every 2.3 days when Ostrander was assuming an average of 2 such hours per week and when the Miller-Carter assumed schedule is contradicted by the operating records. Furthermore, it remai

a mystery how Carter and Miller could honestly assume a 2.3 day shutdown (55.6 hours) when every single weekend meant a minimum shutdown of 64 hours, assuming that the reactor continued to operate until the close of business on Friday and started up again immediately at the start of business on Monday.

In short, the calculations actually demonstrate the falsity of the statements in the Miller affidavit. Their own estimates are 11.9 rem/hour (p. 2); the Ostrander calculations they report indicate doses of 40 rem per hour a week after a run, 26 rem/hour the following week. More particularly, their most optimistic calculations--based on whole core, rather than individual elements as required--indicate doses falling below 100 Rem per hour after 2.3 days, whereas UCLA scheduling modification was merely to operate an average of 2 hours per week (see UCLA interrog. answer 13). The operational intensity assumed by Miller and Carter was not independently verified and was false. Their own computational method, with the operating schedule provided by Ostrander two days after the affidavit, indicated the affidavit's conclusions were false, but not notification was made to the Board.

The Assumption of Doses for the Full Core

The Carter-Miller calculations typed up a week after the Miller affidavit make two basic sets of calculations: one for radiation dose per bundle, as the regulation requires, and another for radiation dose for the whole core, not permitted by the regulations. The exemption as fully stated is: "...except that a licensee is exempt from the requirements of this section to the extent that he possesses or uses special nuclear material which is not readily separable from other radioactive material and which has a total external radiation dose rate in excess of 100 rems per hour at a distance of three feet from any accessible surface without intervening shielding." (73.60). (emphasis added). As the Carter-Miller typed calculations make clear, the basic method for such calculations, the Williamson models, are for individual fuel elements, as required by the regulation. Carter

and Miller ignore Williamson and the regulations and go ahead and make additional calculations for the whole core. Obviously if the whole core is at 100 rem per hour, each of the twenty-four fuel elements will be very much less than 100 rem, as in fact indicated in their calculation.

That the regulation and standard Staff practice was consideration of dose per fuel element, not whole core as relied upon by Miller and Carter in the calculations shielded by failure to be included in the affidavit, is made clear from numerous Staff documents. For example, the Staff was asked by the Commission to study the 100 Rem exemption. It contracted for a study to be performed by Los Alamos. That study makes clear the unit for consideration of dose exemption is the fuel element ("Special Nuclear Material Self-Protection Criteria Investigation", December 22, 1980"). Reporting on that study to the Commission, the Staff in SECY 91-376 again made clear that the unit that must meet the 100 Rem exemption is the fuel bundle. (In that memorandum, the Staff reported on its review whether TRIGA FLIP fuel must be considered per rod or per bundle, given the ease with which the radioactive material can be separated from other radioactive material in the cluster by separating the rods, concluding that the bundle, not the rod was the unit that must meet the 100 R exemption. The memorandum clearly indicates it is not the whole core, however.)

This was made patently clear by the NRC Staff at the Safeguards Upgrade Meeting in August 1979 (at which UCLA's Ostrander was present.) At page 84 of the transcript of that meeting, called by NRC Staff to explain the safeguards requirements for nonpower reactors, a non-power reactor licensee representative asks whether the 100 Rem per hour exemption is for all five kilograms of fuel or "just one little unit." Ramos of the NRC Staff says in response the regulations "says any element not readily separable." He indicates that it would require a rule change to go from considering single units having to meet the 100 Rem to larger quantities involving a collection of bundles.

This is made even clear at page 102 of the transcript. Beginning on page 101, is the following exchange, including two representatives of the Argonaut reactor at Virginia Polytechnic Institute, a sister to UCLA's reactor:

> MR. FURR: Keith Furr, Virginia Tech.
>
> I'd liek to address a question to Mr. Burnett. Since we have MTR type fuel rather than the rod type fuel, what is going to be considered the basic thing that has to meet the 100 R rule? An element or a plate within that element?
>
> MR. RAMOS: At the present time, it's a fuel element which can be anywhere from ten plates to 18 plates, depending on the configuration.
>
> MR. FURR: Okay. Then you have an answer.
>
> MR. CARLSON: One single element.
>
> MR. RAMOS: An element. Not a plate, now; an element.
>
> MR. CURTNER: Alan Curtner, Virginia Tech.
>
> Our question, that MTR fuel, all you would need is one pair of heavy tin-snips and you could break a --
>
> MR. RAMOS: I'm aware of how your fuel's put together. I've seen a lot of it. I realize that with a good sledge-hammer, you'd probably need a tin-snip, but you know, that is considered not readily separable. The TRIGA people have a bigger problem because they're just really screwed down. It's easy to knock that one off. I almost demonstrated it the other night.
>
> (emphasis added)

Thus a reactor essentially identical to UCLA's was told--by NRC Staff, including Carlson, and with Burnett and Knulsen present, as well as UCLA's Ostrander--that each element must meet 100 Rem/hour. Readily separable means what it says--you can readily separate one bundle from another, because they are not connected, but you cannot readily separate one plate from another because they are bolted together into an element. The Carter-Miller assertions that UCLA could meet the 100 Rem exemption were thus false, based on the then-unstated assumption of whole core, which is contrary to Staff practice and the regulation

That the Miller affidavit is based on the false use of the full core rather than individual fuel elements as required by the regulations is confirmed by NRC Staffmember C.K. Nulsen, who was also present at the Upgrade Meeting and who provided an affidavit for Staff in the March 1984 response to the allegations of misconduct. Surprisingly, he does not mention this false matter regarding Miller. Nulsen stated on August 13, 1982, that the current rule regarding exemption for 100 R/hr. is per fuel element, not the entire core as asserted now by Miller in his calculation. (See Hirsch affidavit attached to CBG Response to NRC Staff's Motion for Summary Disposition as to the Issue of the Applicability of 10 CFR 73.60 and the Need to Protect Against Sabotage, dated September 7, 1982.)

Indeed, the Nulsen, Ramos, and Carlson statements--all of which contradict the Miller representation--are further supported by additional Staff SECY documents. SECY 82-456 also indicates that it is the individual fuel element that must meet the exemption. (See, e.g., p. 3, discussing proposed amendments to 73.67 which would require that the average dose per element be 100 rem, with the lowest dose per element as 50 rem. This has not yet been adopted; as indicated in the memo attached to the Hirsch affidavit referred to above, Nulsen confirms that the current rule is all elements must be individuall over 100 rem/hr., with the proposal permitting averaging but not yet approved. Even the new proposal would require the dose be per element.)

The calculation based on full core dose was false, in violation of the regulation. Carlson and Nulsen, as well as Ostrander and others present at the Upgrade Meeting or aware of these other Staff documents making clear the exemption was per element, did not come forward to correct or supplement the assertions by Miller now known to be false.

Even Assuming Dose for the Core, the Miller-Carter Calculations Contradict the Miller Affidavit

We have shown above that the calculations now put forward by Miller to show the truth of his statements in his April 1981 affidavit show the opposite. They show per element doses of 11.9 rem/hr, given the operating assumptions used (p. 3 of Carter typed

calculations.). The material now put forward by Miller in support of his 1981 sworn statements, coupled with the language of the regulation and the Nulsen, Carlson, Ramos statements, as well as the consistent statements in various SECY memoranda, demonstrate that UCLA could not in fact meet the 100 Rem exemption--just as Miller's prior inconsistent statements had asserted.

However, even were one to ignore for the moment the false use of full core instead of individual fuel elements, as required, the calculations now put forward by Miller still demonstrate that his assertion in 1981 was false, still show UCLA could not maintain the 100 Rem per hour exemption, even for the full core.

As indicated above, the Ostrander calculations included in the Carter typed calculation indicate the fuel dose goes below 100 Rem in slightly over a week, to 40 rem per hour, and down to 26 rem per hour the next week--this for the full core.

The Miller calculations are even more explicit. In Miller's new affidavit he states, after repeating the assertion from his previous affidavit that he had verified that the irradiated fuel in the UCLA core emits radiation in excess of 100 Rem:

> This verification was done utilizing a calculational technique to determine dose rate at given distances for a reactor core with fuel similar in design to UCLA and assuming given operating times at a given power with given decay times. A copy of the typed version of the calculation is attached. The absolute number is not important. What is important is that the dose rate will remain above the regulatory self-protecting criteria for a given decay period.
>
> (emphasis added)

The key, of course, is that if the calculations are correct, the fuel remains above the regulatory self-protecting criteria only for the assumed decay period, and falls below the self-protecting criteria for shutdowns longer than the assumed decay period. The calculation referred to in Miller's second affidavit demonstrates, not that his

assertion in his first affidavit is correct, but that it is false. The calculation demonstrates that UCLA cannot maintain self-protecting levels, even for the full core, and, in fact, that the core goes below 100 Rem whenever the reactor is shutdown more than 55.6 hours, the "given decay period" assumed by Miller and Carter for the calculation. As indicated above, the shutdown for any weekend is at minimum eight hours longer than the time ascertained by Miller and Carter to be the period during which self-protection could be maintained. Furthermore, as indicated above, the actual "commitment" to Staff was at best to operate the reactor an average of 2 full power hours per week (see UCLA interrogatory answer 13), whereas the Carter calculation requires operation of 2 full hours every 2.3 days, a schedule more intense and more regular by far than the facts. The calculation Miller claims supports his affidavit in fact demonstrates its falsity--the calculation, even accepting all its assumptions, shows that the reactor cannot maintain and sustain the 100 Rem exemption, because it goes below that level after only 2.3 days. (The Ostrander calculations reported in the Carter memorandum cannot be used as support for the Miller affidavit, as Miller did not learn of them until two days after he submitted the affidavit.)

That the cited calculations show the falsity of the 1981 Miller affidavit is made clear by SECY 81-376. As indicated above, it concluded (Enclosure C, p. 2) that UCLA had a formula quantity on site because "When the reactor is occasionally shut down for periods of three days or greater, the irradiation levels drop below the exemption threshold for short periods of time. This 3.6 kg unexempted fuel in combination with 4.6 kg 93% enriched U-235 unirradiated fuel locked in a vault (which is considered contiguous site) would raise the amount of SSNM on-site to a formula quantity." (emphasis added). The SECY document, written after the supposed operating schedule change at UCLA, makes clear that the only way to exempt UCLA from the 73.60 requirements would be through the proposed amendments discussed in that memorandum, which have not yet been adopted, which would eliminate 73.60 and give certain credit (not currently given) for reactor configuration and accessibility to fuel.

The conclusion in SECY 81-376 that under current regulations (several months after Miller's affidavit) UCLA possessed a formula quantity is intriguing in light of the 2.3 day decay period conclusion from the Carter-Miller calculation. SECY 81-376 concludes that UCLA has a formula quantity because the radiation level of its fuel goes below 100 Rem for shutdowns of three days or longer. Miller and Carter came to the same conclusion (2.3 days being the threshold), but didn't tell the Board that, in fact saying the opposite of SECY 81-376. (UCLA, in addition to the discussion in Enclosure C of that memorandum, cited above, is listed as a licensee with more than a formula quantity that would at some time in the future take action to reduce its holding of SNM to below the formula level, an action which finally took place in the summer of 1982; see p. 2 of memorandum).

It would appear that the Staff, faced with the same calculation that UCLA's fuel went below the 100 Rem level in approximatel three days of shutdown, told the Commission UCLA had a formula quantity and the Board that it didn't!

If the statements in the SECY document represent a new calculation, the Board was never informed of the new development, as it should have been. Whether the SECY conclusion was due to a new calculation or differing interpretation of the same calculation, the Staff had an ironclad obligation to inform the Board of the information which would have shed a different light on the Staff's previous representations.

Miller in April 1981 swore that he had verified that the UCLA fuel was in excess of 100 Rem, that he could attest by virtue of "personal knowledge" that UCLA had less than the amount of SNM specified in 10 CFR 73.60. The calculation he now puts forward to support that sworn statement demonstrates the opposite--even if one considers the whole core, UCLA cannot maintain the 100 R exemption because the fuel goes below the limit after a shutdown of only 2.3 days. Staff told the Commission after the Miller affidavit that that

inability meant UCLA had a formula quantity. Miller told the Board the opposite, although without any supporting data. The submission now shows that the statement was untrue, and that the previous and subsequent Staff statements on the subject were correct: UCLA could not attain and maintain the self-protection criteria. Miller's statements to the Board were untrue.

Misleading Implication that Miller Had Measured the Dose Rate

Perhaps the most troubling aspect of the Miller 1981 affidavit is the clear implication--which turns out to be false--that he had personally measured the fuel dose rate he was now attesting to. His affidavit begins by saying he personally toured the reactor (P 4) and "can state from my own observation that the security program at UCLA complies with the applicable requirements of 10CFR 73.67." (emphasis added, P 4). However, the facts of the matter are that Miller's tour occurred prior to the supposed change in operations, during a period when he now admits UCLA had a non-self-protecting formula quantity, thus making the applicable regulation 73.60. He made no personal observation that could form the basis for the sworn statement that the only applicable requirement is 73.67.

In paragraph 5, he states:

> Additionally I can of my own knowledge, state that UCLA does not have on site the quantity of special nuclear material described in 10 CFR 73.60 and that, therefore, this section of 10 CFR Part 73 does not apply to UCLA, and that only 73.67 (d) of Part 73 applies to the UCLA security plan requirements.
>
> (emphasis added)

However, Miller now makes clear he had no personal knowledge of the matter at all, but rather only did calculations based on what he assumed, without verification or other personal knowledge, was UCLA's operating schedule. More importantly, it is now admitted by Staff that UCLA did indeed at the time of this affidavit have on the site the quantity of SNM described in 73.60. Counsel for Staff in her January 10, 1984, pleading (p. 20-21) asserts that UCLA did have sufficient

quantities of SNM to be subject to 10 CFR 73.60, but asserts that it was exempt from 73.60 by virtue of its irradiation level, not its quantity. In paragraph 7 Miller asserts that the irradiation level is sufficient to exempt it; one cannot help but read paragraph 5 as telling the Board that in addition it is not subject to 73.60 because the quantity is insufficient. (It is important to keep in mind that at this stage the Board did not know how much SNM was actually on site--all it had was UCLA's application for an upper limit, and Staff's argument that authorization levels did not apply, only actual possession levels, and Staff's assertion that CBG was operating out of "lack of information" as to the quantity of SNM acutally on site. TR 389. Thus a representation by Miller that he had toured the facility and knew of his own observation that the amount of SNM on site was less than 73.60 levels, in addition to his assertions on the next page of his affidavit that the material that was on site was highly irradiated, could not help but be read as indicating two separate grounds for throwing out CBG's contention on summary disposition--Miller asserting CBG was wrong about the amount and wrong about the irradiation level, when it turns out CBG was right about both. This is one more reason why the behavior of Staff in making conclusory statements and shielding from the Board and parties the factual basis therefore, which turns out to contradict the statements, is so destructive of the Board's duty to obtain a factual and complete record upon which to base important public health and safety determinations.)

Finally, Miller also says that he can of his own knowledge state that only 73.67(d) of Part 73 applies to the UCLA security plan requirements. However, Miller's memorandum of June 28, 1979 to Bob Burnett states clearly that reactors with less than formula quantities of SNM (the category Miller asserts is correct for UCLA) must meet both 73.40 and 73.47 (now 73.67). Thus, his assertion that he can of personal knowledge stated that only 73.67 of Part 73 applies is false; his own personal knowledge knew that 73.40 also applied

Miller went on in paragraph 6 of his affidavit to report "personal observations" of the facility made on his tour which he alleged contradicted the contention. And in the final paragraph--the key one in question--says he has "verified" that the irradiated fuel in the UCLA core emits radiation such that the dose at three feet will be in excess of 100 rems per hour. But we now know that his tour was when the fuel was below 100 rems per hour, that he did not personally determine the fuel dose at all, and that he did nothing to verify the supposedly changed operating schedule that formed the basis for his calculation based on assumed--and false--operating frequency. Furthermore, the last sentence of the paragraph makes clear that his "verification" of the fuel dose is independent of the UCLA commitment to schedule reactor operations to maintain the dose rate, whereas it was totally and exclusively dependent upon said non-verified promise.

It is impossible to read the Miller affidavit without believing that Miller is saying he toured the facility, knows from personal observation that UCLA had less than 5000 grams of U-235 on site, and that from those same observations he had verified that that portion of the SNM on site that was in the core was irradiated at more than 100 Rem/hour continuously and that he had received commitments to maintain the conditions he found on his inspection at all times. In fact, none of this was true. Miller's inspection was during a time when UCLA had on site about 9000 grams of SNM, when the fuel was, by Miller's own admission, irradiated at below 100 rems per hour, that he made no measurements at all, and his "verification" consisted of receiving Wegst's January 1981 letter with its unspecific pledge regarding operating schedule which Miller did not verify. His calculations, in fact, show that UCLA couldn't maintain 100 Rem for more than 2.3 days of shutdown and thus could not qualify for the exemption, as the Staff in fact informed the Commission in June 1981 in SECY 81-376. However, the Staff did not so inform the Board, but swore the opposite was true.

Furthermore, the failure of the Staff to serve the Miller-Wegst letter of January 1981 upon the Board and parties, as required, a matter not denied by Staff (there is no denial in the Staff response on this matter that it indeed did provide the letter and information therein nor that it was required to do so), meant that the Board was not on notice that the Staff had, a few days before arguments to the contrary on the matter were heard and a few months before Miller's affidavit to the contrary was submitted, found UCLA had to comply with 73.60.

The long and short of it is that the Staff knew that UCLA had more than a formula quantity on site, knew that UCLA couldn't maintain the 100 Rem exemption, had told UCLA and the Commission this repeatedly, but told the Board the opposite, withholding the contrary information.

12-19-9

Ron Smith

[re UCLA # XX]

This is document that has affidavits by [Carlson & Miller.] Left note for John Frye about p. 10, his order of 12-23

E. Luebke

Received 12/30/83 RWS

84-9

C-39

B-1

Office of Inspector and Auditor

CASE SUMMARY

TITLE: Allegations Against Three NRC Employees - ASLBP

File No.: 84-9
Date Opened: 12/29/83
Investigator: R. Smith

NRC REGION: n/a
SITE: UCLA

Inspection: _____
Investigation: integrity
(criminal-integrity-EEO-other)
Review: _____

LICENSEE: UCLA

CONTRACTOR: n/a

ALLEGATION: That an NRC staff counsel, and two other NRC employees, separately lied before the ASLBP on material matters before the Panel.

DATES:	SIGNIFICANT DEVELOPMENTS
12/29/83	Case provided for review on 12/27/83. After review & discussion w/Messenger, case opened and further documents requested from ASLBP (Elva Leins-x27893).
1/23/84	Analysis of James Miller Affidavit
1/27/84	Comparison of Carlson affidavits, analysis of Woodhead allegation.
2/6/84	Interview of Hirsch, CBG President (alleger)
2/15/84	Partial Interview of Carlson.
2/17/84	Received additional materials from Judge Frye.
2/22/84	Interview of Colleen Woodhead.
2/29/84	Interview of Miller.
3/13/84	Review IE Safeguards Inspection Reports.
3/15/84	Interview Carlson and Rentschler.
3/16/84	Interview Woodhead and Gray.

C-4/0

B-2

4/16/84 Interview of Bush

5/9/ 84 Interview of Schuster

6/12/84 ROI issues to Commission. CASE CLOSED..

Cite as 17 NRC 927 (1983) LBP-83-25A

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

John H Frye, III, Chairman
Glenn O. Bright
Dr. Emmeth A. Luebke

In the Matter of

Docket No. 50-142-OL
(Proposed Renewal of Facility License)

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
(UCLA Research Reactor)

May 11, 1983

Licensing Board denies Staff's motion for summary disposition of intervenor's contention concerning physical security at the applicant's facility after finding that the materials submitted in support of and in opposition to the motion disclose inconsistencies between the amount of special nuclear material accounted for by applicant and that reported by Staff in two inspection reports. Staff is directed to physically inventory the material. Licensing Board also rules on certain disputes regarding interpretations of 10 CFR Part 73 and permits the parties to seek reconsideration of those rulings.

SECURITY PLAN: 10 CFR §73.60 DETERMINATION

Sealed plutonium-beryllium neutron sources are to be considered for purposes of determining whether a formula quantity of strategic special nuclear material exists for purposes of §73.60.

EXHIBIT

SECURITY PLAN: POSSESSION VS. AUTHORIZATION TO POSSESS SNM

The provisions of 10 CFR Part 73 applicable to non-power reactor licenses hinge the level of physical protection required on the amount of special nuclear material actually possessed, rather than the amount authorized to be possessed.

SECURITY PLAN: REQUIREMENT TO PROTECT AGAINST SABOTAGE

10 CFR §73.40(a) requires all non-power reactor licensees to take measures to protect against potential sabotage.

MEMORANDUM AND ORDER

(Ruling on Staff's Motion for Summary Disposition of Contention XX)

Contention XX advanced by the Committee to Bridge the Gap (CBG) concerns the provisions governing the physical security of the Nuclear Energy Laboratory (NEL). It asserts in part that UCLA must comply with 10 CFR §73.60 and must take measures against potential sabotage.

On April 13, 1981, NRC Staff moved for summary disposition of this contention. Its motion was ruled to be premature and responses were deferred pending completion of discovery. In turn, discovery was contingent upon the agreement of the parties to a suitable protective order and nondisclosure agreement which would protect sensitive information. No such agreement was forthcoming and the parties have submitted that matter for a Board ruling.

Because it appeared that the NRC Staff's motion raised some issues which could be addressed without access to sensitive information, and because ruling on those issues could influence the scope of other issues raised by Contention XX, the Board directed that these issues be taken up initially. These issues concern the applicability of 10 CFR §73.60 and the need to protect against potential sabotage.

THE REGULATORY FRAMEWORK

Before discussing the conflicting positions of Staff and CBG, it is appropriate to lay out the regulatory framework of Part 73.

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...suitable protective order and
...sensitive information. No
...arties have submitted that

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...y of 10 CFR §73.60 and the

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...of Staff and CBG, it is ap-
...Part 73.

Part 73 "... prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites ... and of plants in which special nuclear material is used." (10 CFR §73.1(a).) Section 11(aa) of the Atomic Energy Act defines "special nuclear material" as plutonium and uranium enriched in the isotopes 233 or 235. Special nuclear material is categorized by Part 73 in terms of quantity, and the protection requirements vary accordingly. Part 73 defines "strategic special nuclear material" (SSNM) as "... Uranium 235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), Uranium 233, or plutonium." (10 CFR §73.2(aa).)

The greatest protection is required for a "formula quantity" of SSNM. A "formula quantity" is 5000 grams or more of SSNM computed as follows: grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium). For purposes of this discussion, it is sufficient to note that non-power reactor licensees possessing a "formula quantity" of SSNM must comply with 10 CFR §73.67(a), (b), (c), and (d) as well as 10 CFR §73.60. The latter section imposes the most stringent requirements.

The next lower level of protection is required for less than a "formula quantity" of SSNM but more than 1000 grams of material. Material in this category is called "special nuclear material (SNM) of moderate strategic significance." The kinds of material which are included in this category are set forth in the definition in 10 CFR §73.2(x). For purposes of our discussion, the relevant materials are U-235 and plutonium, and the protection requirements are those set forth in 10 CFR §73.67.

The lowest level of protection, required for SNM of low strategic significance, is also set out in 10 CFR §73.67. This material is defined in 10 CFR §73.2(y), and is not involved in this application.

Section 73.67(a) sets forth the general objectives to be attained by the physical protection of SNM of moderate and low strategic significance. These are (1) to minimize the possibility of unauthorized removal of the material, and (2) to facilitate the recovery of missing material. To achieve these objectives, the physical protection system is to ensure early detection and response to any unauthorized access to or removal of SNM, and proper handling of SNM. Section 73.67(b) exempts SNM which emits more than 100 rems per hour at a distance of three feet, sealed plutonium-beryllium neutron sources containing no more than 500 grams plutonium, and to plutonium with an isotopic concentration exceeding 80 percent plutonium-238. Subsection (d) sets forth specific requirements for the protection of SNM of moderate strategic significance, and subsection (f) sets forth requirements for SNM of low strategic significance.

Section 73.60 applies to formula quantities of SSNM possessed by non-power reactor licensees. It incorporates the provision of §73.67(d) and adds requirements concerning the storage, processing, and access to the SSNM. Additionally, it should be noted that §73.40(a) requires, without express limitation, that all licensees are to provide physical protection against sabotage or theft of SNM at fixed sites. Subsection (b), (c), and (d) of this section lay down general requirements for physical protection plans and are expressly applicable to those licensees who must comply with §73.60.

THE FACTUAL SETTING

UCLA's application for license renewal seeks authority to possess:

(1) 4700 grams U-235 (irradiated);
(2) 4700 grams U-235 (fresh); and
(3) Pu-239 as a 2 curie, Pu-Be neutron source.

(Application, p. 5.)[1A]

At the time Staff filed its motion for summary disposition in April, 1981, UCLA apparently possessed a formula quantity of SSNM. (*See* Exhibit C to CGB's response, Memorandum from M. Ostrander to W. Cormier of August 25, 1982).

Following a site visit Staff wrote UCLA on January 12, 1981, indicating that it would be necessary for UCLA to either:

(1) comply with the provisions of 10 CFR §§73.60 and 73.67(a), (b), (c), and (d); or
(2) ship fuel in storage to another location; or
(3) operate the reactor to maintain the fuel irradiation level at a rate of 100 rem/hr at a distance of three feet.

Although Staff's letter does not so state, it must be assumed that the necessity to adopt one of the above alternatives resulted from the presence on site of a formula quantity of SSNM. On January 29, 1981, UCLA responded that, while it explored its options for reducing its inventory of unirradiated fuel, it was scheduling reactor operations so as to comply with alternative (3), above. (*See* Exhibits B and C to Exhibit E attached to CBG's response.)

Finally, on August 6, 1982, UCLA wrote Staff indicating that it had transferred offsite sufficient U-235 to reduce its inventory to 3530 grams irradiated and 1390 grams fresh, a total of 4920 grams U-235. UCLA's letter

[1A] On March 2, 1983, Staff issued an amendment to the operating license for this facility to permit possession of up to 5 kg of U-235, 32 grams of plutonium as a plutonium-beryllium neutron source, and one gram of plutonium in the form of foils or wires for flux distribution measurements. *See* letter of March 2, 1983, to Dr. W. F. Wiggs of UCLA from D. Eisenhut, Director, Division of Licensing, NRC.

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stated that the transfer removed an unnecessary constraint on reactor operations. UCLA asserted that while under normal operating conditions alternative (3) above is met, the transfer would permit the reactor to be shut down for an extended period. (*See* Exhibit A to Intervenor's response.)

THE POSITIONS OF THE PARTIES

In order to reflect the circumstances presented by UCLA's recent transfer of fuel, Staff sought on August 20, 1982, to amend its motion for summary disposition. This matter was discussed in a conference call of August 25, and Staff was requested to serve its amended motion with deletions and additions appropriately indicated so that the Board and the parties would be accurately advised of the Staff's new position. Staff Counsel accomplished this through deletions and interlineations to her April, 1981, motion and served the amended motion August 31, 1982.

Staff argues that only §73.67 is applicable to the NEL. Staff takes the position that the regulations only require compliance with the more stringent standards of §73.60 if a licensee actually *possesses* formula quantities of SSNM; that mere authority to possess formula quantities is insufficient. Staff notes that the 4920 grams of U-235 which UCLA asserts are at the NEL constitute less than a formula quantity of SSNM, and argues that the two-curie Pu-Be neutron source is both exempt under the provisions of §73.67(b)(1)(ii) and negligible. Staff no longer takes the position that some of the U-235 at the NEL is exempt because it emits 100 rem/hour at a distance of three feet, an exemption which UCLA invoked on being told by Staff that it must comply with §73.60. Thus it is Staff's position that UCLA possesses SNM of moderate strategic significance and must comply with §73.67 only. Finally, Staff asserts that there is no legal requirement for UCLA's physical protection plan to provide protection against sabotage. UCLA generally supports Staff's position (Tr. 773-74), but has not filed a formal response.

CBG takes the position that a formula quantity of SSNM is present at the NEL. CBG did not in its response to this Motion, disagree with Staff over the quantity of U-235 at the NEL. However, in its Motion for Summary Disposition on Contention XIII and in supplemental responses to this Motion, CBG does raise the possibility that there are in fact more than 5000 grams of U-235 present at the NEL.

CBG takes sharp issue with Staff over the treatment under the regulations of the two-curie Pu-Be neutron source. CBG asserts that the exemption for that material relied on by Staff applies only to §73.67, not to §73.60. CBG argues that under the latter section, the neutron source must be

included in the computation of the quantity of SNM on hand. Because a two-curie source requires 32 grams of Pu-239, and because under the formula this 32 grams must be multiplied by 2.5 before being added to the quantity of U-235 on hand, a formula quantity of SSNM is on hand at the NEL. According to CBG, the §73.60 computation goes as follows:

$$4920 \text{ grams U-235} + 2.5\,(32 \text{ grams Pu-239}) = 5000$$

Thus it is CBG's position that §73.60 is applicable.

CBG also argues that the applicable regulatory standard must be judged by the amount of SNM for which authority is sought rather than the amount actually on hand, and argues that UCLA's calculations of the radiation emitted by irradiated fuel are in error. Thus in CBG's view, UCLA must comply with §73.60 regardless of the amount of SNM which may be on hand presently. Finally, the CBG argues that UCLA's plan must take account of potential sabotage.

DISCUSSION

A. Present SNM Inventory

As noted above, CBG asserts that there are in fact more than 5000 grams of U-235 present at the NEL. CBG bases this assertion on various inspection reports filed by Staff (Inspection and Enforcement). CBG summarizes the contents of these reports as follows in footnote 1 of its February 8, 1983, Supplemental Response to the Motion:

> 1/14/71 Inspection Report, No. 50-111-6: Fuel Core (3461), Fuel plates (39), Uranyl nitrate solution (250), U/AL plates (19); TOTAL U-235: 3769 plus Pu-239 (160), TOTAL SNM 3929. (Exhibit F).
>
> 12/12/74 Inventory attached to letter from Asbaugh to Goller: Fuel core (2971.88), material in pits (591.77), other (731.22), Fresh fuel (37451.27), Scrap can (421.31), Scrap plates (154.54), Uranyl nitrate solution (250), TOTAL U-235 8,865.99 plus Pu-239 (160), TOTAL SNM 9025.99. (Exhibit G).
>
> 5/20/75 Inspection Reports, No. 50-142/75-03 & 70-223/75-01: Fuel core (3540), Material in pits (738), Material in other storage (4571); TOTAL U-235 8849 plus Pu-239 (160), TOTAL SNM 9009. (Exhibit H).
>
> 10/21/78 Inspection Report No. 50-142/78-03 and 10/10/79 Inspection Report No. 50-142/79-03: Fuel core (3600), material in

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-235 8,865.99 plus Pu-239
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2/75-03 & 70-223/75-01:
Material in other storage
39 (160); TOTAL SNM

78-03 and 10/10/79 In-
core (3600), material in

pits (700), material in other storage (4700); TOTAL U-235 9000 plus Pu-239 (160), TOTAL SNM 9160 (Exhibit I).

CBG also referenced an October 10, 1979, inspection report (also attached to its Response) which concerns a September, 1979, inspection which examined UCLA's activities related to physical protection against industrial sabotage and theft of SNM. This report states that "[t]he NEL has in its possession approximately 8.3 kgs of SNM in the form of 93% enriched U-235." The report states that "the SNM" was stored at three specific locations. The total of the amounts stored at these locations equals 8.9 kg, 0.6 kg more than the total U-235 said to be on hand. No explanation of the inconsistency is given. CBG relies on this report and the October 1978, report (Exhibit I summarized above) for the proposition that UCLA had 9.0 kg U-235 in the Fall of 1978 and 1979. CBG then cites certain fuel inventory data prepared by UCLA in response to CBG's discovery requests to show that this inventory of U-235 has been reduced by 3.698 kg.

Because we were unable to resolve the problems presented by CBG on the basis of the pleadings, we asked UCLA and Staff to respond to CBG's allegations. In its Response of March 16, UCLA asserts that CBG's conclusion is unwarranted. It bases this assertion on the fact that fuel inventory data upon which CBG relies did not take into account transfer of Uranyl Nitrate which is not fuel but contains U-235. This discrepancy resulted, according to UCLA, because CBG had asked for changes in the inventory of fuel only in its discovery request.

UCLA then accounts for the inventory of U-235 as follows:

CBG's "Exhibit G" inventory of 12/12/74	8866 grams
Less burn-up not previously accounted for	17
CBG's "Exhibit H" inventory of 5/20/75	8849
Plus adjustment reflecting change in accounting for scrap fuel	19
	8868

1975 year-end inventory as follows:

fuel in core	
fresh fuel	3.53 kg
spent fuel	3.75
scrap fuel	0.74
Uranyl Nitrate	0.59
	0.25
	8.86

UCLA sets out the reductions in inventory since 12/31/1975 as follows:

Uranyl Nitrate (1981)	245 grams	
Uranyl Nitrate (1982)	5	
Total		250 grams
Spent fuel (1980)	738 grams	
Scrap fuel (1981)	595	
Fresh fuel (1982)	2355	
Fuel burn-up	7	
		3695 grams
Total reduction		3945 grams
Total U-235 on hand		4923 grams

Staff, in its response of March 23, 1983, as supplemented by its letter of March 29, 1983, substantiates the reductions in inventory reported by UCLA with the exception of the fuel burn-up. Staff reports this to be 4, rather than 7 grams.

Both UCLA and Staff attack CBG's reliance on the October, 1978, inspection report (CBG's Exhibit I). Both take the position that CBG has misinterpreted that report by claiming that it recites UCLA's inventory as consisting of 9000 grams U-235 plus two Pu-Be neutron sources. Staff and UCLA maintain that the report indicates that the 9000 grams includes the two neutron sources, so that the U-235 inventory reported is actually 8840 grams.

On April 13, CBG filed a second Supplemental Response to the UCLA and Staff explanations. In that Response CBG correctly points out that its Exhibit I recites the existence of 3.6, 4.7, and 0.7 kg U-235, a total of 9.0 kg. The neutron sources thus constitute an additional quantity of SNM in this inventory. CBG also questions the accuracy of the isotope weights given for the fuel shipped offsite, pointing out that according to the transaction report, furnished by Staff, the average quantity of U-235 per fuel plate was

3.53 kg
3.75
0.74
0.59
0.25
8.86

12/31/1975 as follows:

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250 grams

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3695 grams
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14.27 grams. CBG contrasts this figure with that given in the Application of approximately 13.0 grams per plate.

While we realize that isotope weights for individual fuel plates will vary and that we cannot be assured from what is presently before us of the precise isotope weights of each individual fuel plate shipped offsite by UCLA, we are more concerned with the inconsistencies between the UCLA accounting for the fuel inventory and the Exhibit I inspection report. If the 9000 gram inventory reported in Exhibit I is correct, then the offsite shipments of U-235 identified by UCLA and Staff are insufficient to reduce the inventory below 5000 grams.[1] As noted above, UCLA's inventory must be below 5000 grams if it is to avoid compliance with the requirements of 10 CFR §73.60. Hence the total inventory is a critical concern.

Because of the inconsistency between the Exhibit I inventory and the UCLA inventory, we are unable to resolve this important factual matter on the papers before us. Moreover, we are of the opinion that it can be effectively resolved only by a physical inventory of the SNM presently at the NEL. Because we are here concerned with Staff's Motion for Summary Disposition, and because Staff's inspection report is the source of the difficulty, we believe Staff should conduct such an inventory and report to the Board and the parties on its results. Hopefully, this step will put the matter to rest; if it does not, we will entertain the views of the parties as to what additional steps are necessary.

While we recognize that, based on what is now before us, the possible amount of SNM in excess of 5000 grams is small, perhaps even *de minimis*, we also recognize that the regulation in question does not provide leeway to overlook this possible excess. 10 CFR §73.60 is plainly applicable to licensees who possess 5000 grams or more of SSNM. Had the Commission intended to overlook small amounts in excess of 5000 grams, it would have worded its regulation to effectuate this purpose. Addition of the word "approximately" before 5000 grams would have accomplished this.

Nor can the absence of such language be deemed unintentional in view of the sensitive nature of the subject matter of the regulation. When HEU is

[1] We have not considered the 1979 inspection report because of its internal inconsistency which we discussed above. We note that if the larger quantity of SNM identified there is correct, UCLA's shipments of SNM offsite would be sufficient to reduce its inventory below 5000 grams. However, this report presents additional difficulties. Unlike the Exhibit I report from the previous year, it makes no mention of Uranyl Nitrate. Nor would the 250 grams of this material explain the discrepancy between the "8.3 kgs of SNM in the form of 93% enriched U-235" and the specific amounts totaling 8.9 kg listed by storage location. Moreover, in the edited report furnished CBG, a total of 3.6 kg of SNM is identified at one location, an amount that compares to UCLA's 1975 year-end inventory identification of 3.53 kg in the core. Similarly the 1979 report identifies 0.7 kg irradiated SNM which compares to 0.74 kg spent fuel identified in the 1975 inventory. However, the third figure, 4.6 kg nonirradiated SNM in the report is almost a kilo more than the 3.75 kg fresh fuel identified in the 1975 inventory. Consequently this report only adds to the confusion.

concerned, one must assume that the Commission meant what it plainly said

B. Applicable Regulations

Despite the dispute between CBG and Staff with regard to the present inventory of U-235 at the NEL, several legal issues are presented by the parties which are now ripe for resolution. The first of these involves the appropriate treatment under the regulations of the 2-curie Pu-239 neutron source present at the NEL — is 10 CFR §73.60 applicable because of the presence of the Pu-239?

CBG asserts that two curies of Pu-239 weighs 32 grams, but does not give the basis for that conclusion. Staff does not address this point. We have independently calculated the weight of the two-curie Pu-239 neutron source and have arrived at a weight of 32.2 grams. Our calculation is set forth in the margin.[2]

Thus, if CBG is correct that the two-curie Pu-Be source is not exempt under the formula set out in §73.60, and assuming that UCLA's accounting for the SNM is correct, there are slightly in excess of 5000 grams of SSNM present at the NEL.[3] This would require UCLA to comply with the provisions of that section.

Staff relies on §73.67(b)(1)(ii) for the proposition that sealed plutonium-beryllium neutron sources are not to be considered. This subsection does provide an exemption for these sources. However, as CBG points out, the exemption is by its terms limited to "this section," *i.e.*, §73.67. It does not, by its terms, apply to §73.60.

Staff does not elaborate on its position that, despite its terms, §73.67(b)(1) applies to §73.60. Section 73.60 states that possession of a formula quantity of SSNM subjects the licensee to the provisions of subsections (a), (b), (c), and (d) of §73.67 and to the requirements of §73.60, unless the material is self-protecting because it has an external radiation

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[2] $\Delta N/\Delta T = -0.693N/T_{1/2}$

or, $N = -(\Delta N/\Delta T)(T_{1/2}/0.693)$

Now, $2C_i = 7.4 \times 10^{10}$ atoms/sec

So, $N = -(-7.4 \times 10^{10}$ atoms/sec$)[(2.411 \times 10^4$ yr$)/0.693] \times (3.1536 \times 10^7$ sec/yr$)$

$= +81.19 \times 10^{21}$ atoms

$\div 6.02 \times 10^{23}$ atoms/gm atom

$= 0.1349$ gm atom

$\times 239$

$= 32.2$ g

[3] 4920 grams U-235 + 2.5 (32.2 grams Pu-239) = 5000.5 grams SSNM

dose rate in excess of 100 rems per hour at a distance of three feet. This exception is also stated in §73.67(b)(1)(i). The other exceptions stated in §73.67(b), particularly subsection (b)(1)(ii) exempting sealed Pu-Be neutron sources, are not repeated in §73.60. We must conclude that their omission was intentional. Thus sealed Pu-Be neutron sources are to be considered for purposes of determining whether a formula quantity of SSNM exists for purposes of §73.60. If a formula quantity exists for purposes of §73.60, then §73.67 (a), (b), (c), and (d) also came into play. However, the exemption of these sources from §73.67 permits them to be disregarded in determining whether SNM of moderate or low strategic significance exists. Had the Commission wished to disregard these sources in computations under §73.60, it could easily have made the subsection (b)(1)(ii) exemption applicable to §73.60. The fact that the Commission chose to adopt the substance of the subsection (b)(1)(i) exemption in §73.60 while ignoring the subsection (b)(1)(ii) exemption after having stated that those subject to §73.60 ". . . shall protect the [SNM] from theft or diversion pursuant to the requirements of §73.67(a), (b), (c), and (d) and as follows . . ." indicates that the Commission did not so intend. This conclusion is reinforced by the fact that, in enacting the §73.67(b)(1)(ii) exemption, the Commission was concerned only with SNM of moderate and low strategic significance. (*See* 44 Fed. Reg. 43280 (July 24, 1979).) On the other hand, when enacting the regulations here in question some four months later, no mention of Pu-Be neutron sources is made. (*See* 44 Fed. Reg. 68184 (November 28, 1979).)

Before leaving this subject, we note that Staff's position is consistent with a proposed amendment to Part 73 which would eliminate §73.60 altogether and amend §73.67 to provide for licensees possessing formula quantities of SSNM in addition to SNM of moderate and low strategic significance. These amendments retain the subsection (b)(1)(ii) exemption for plutonium-beryllium neutron sources applicable to "this section," thus making it clear that these sources would not be considered in computing inventories of SSNM if this proposal is enacted. (*See* 46 Fed. Reg. 46333 (September 18, 1981).)

C. Contention That the Quantity of SSNM Authorized Is Controlling for Purposes of Part 73

CBG's position that the applicable provisions of Part 73 should be determined on the basis of the amount of SNM authorized, as opposed to the amount on hand, is based on equitable arguments. CBG views it as improper to conclude that UCLA need not comply with the safeguards requirements for formula quantities of SSNM on the basis that less than a formula

quantity is on hand at a particular point in time while permitting UCLA to bring a formula quantity to the NEL at any time. CBG views the reporting requirements for receipt of SNM as providing no substitute for an airing of the matter in an adjudication. Finally, CBG chides the Staff for inconsistency, it points to SECY-79-187B in which the Executive Director for Operations represented to the Commission that the Staff would take action to limit UCLA's authorization to less than a formula quantity of SSNM and contrasts that with the Staff position here that no such limitation is necessary.

CBG's arguments are not without appeal. However, we are bound to follow the Commission's regulations which clearly and consistently hinge the applicability of their various safeguards provisions on the amount of SNM *possessed* by a licensee, not the amount authorized. Consequently, CBG's position must be rejected. In so holding, we note that CBG's position has been adopted in the proposed amendments to Part 73 discussed above. *See* proposed §73.67(h)(i). Should this amendment be adopted, UCLA would either have to comply with the higher standards for protection set forth in §73.67(h) or reduce its authorization level.

While we agree with CBG that the amendment of the application to authorize possession of less than a formula quantity of SSNM, as promised by the Staff in SECY-79-187B, is a good idea, we lack any basis in this record to require it.[4]

D. Self-Protection of Fuel

Because UCLA no longer relies on the self-protection criteria of 10 CFR §§73.60 and 73.67 (Ex. A, CBG Response of September 7, 1982), it is unnecessary to address CBG's arguments concerning the ability of UCLA to schedule reactor operations to maintain a dose rate of 100 rem/hour.

E. Requirement to Protect Against Potential Sabotage

CBG takes the position that §73.40 requires that UCLA's security plan must provide protection against potential sabotage. Section 73.40(a) states in part. "Each licensee shall provide physical protection against radiological sabotage and against theft of special nuclear material at the fixed sites where licensed activities are conducted." Staff takes the position in its

[4] A dispute has arisen concerning our authority to require UCLA to amend its application in connection with Contention XIII. As pointed out in our Memorandum and Order denying CBG's motion to take up its Motion for Partial Summary Disposition of Contention XIII, this dispute is not ripe for resolution now. Consequently the sentence in the text implies no views on the merits of this dispute. In any event, as noted in footnote 1A, *supra*, UCLA's possession limit has now been reduced

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motion without elaboration, that the regulations do not require UCLA to provide such protection. Additionally, one of Staff's affiants supporting the motion points out that "[t]here are no *explicit* NRC regulations for the protection of non-power reactors against radiological sabotage . . ." (emphasis supplied). (Carlson affidavit, p. 4 n.1).

In its supplemental response, CBG points to prior statements of Mr. Carlson concerning 10 CFR §73.40 which it regards as inconsistent. These statements were made at a meeting between non-power reactor licensees and Staff in 1979.

CBG also relies on certain statements contained in the Commission's 1979 and 1980 *Annual Reports* for its position.

At the outset, we note that on its face the first sentence of §73.40 is clearly applicable to all licensees, and furnishes no basis for arguing that it is inapplicable to UCLA. Nonetheless, Mr. Carlson is correct in stating that there are no *explicit* regulations for the protection of non-power reactors possessing less than a formula quantity of SSNM against sabotage. Subsections 73.40(b), (c), and (d), which lay down such a regulatory scheme, do not apply to non-power reactor sites containing less than a formula quantity of SNM. Similarly, §73.55 pertains only to power reactors.

In order to determine the applicability of 10 CFR §73.40(a) to UCLA, it is helpful to trace the history of the requirements that licensees protect against sabotage. We begin with the AEC's Memorandum and Order in *Florida Power & Light Co.* (Turkey Point Nuclear Generating Station, Units 3 and 4), 3 AEC 173 (1967) where, in answer to a certified question, the Commission stated ". . . protection against possible sabotage is a matter to be dealt with at the operating license stage. At such later stage we would expect the staff, in accordance with its practice, to assure that appropriate industrial security measures are provided for by the applicant." 3 AEC at 174.

Subsequently, in *Trustees of Columbia University*, 4 AEC 349 (1970), the Appeal Board, relying on *Turkey Point*, held that University reactors must take measures to protect against sabotage. That Board stated

> [t]hus, as respects the possibility of industrial sabotage or civil disturbance, it will properly be the role of the Board to determine, on the basis of the record, whether applicant's proposed industrial security measures for this particular facility are adequate. In evaluating the adequacy of those security measures, their effectiveness in preventing any credible hazards to the public should be examined, as should be the inherent and engineered safety characteristics of the facility which bear on the matter. (4 AEC at 353, footnote omitted.)

In its Decision in the *Columbia* case (4 AEC 849), the Appeal Board examined and approved with certain conditions the applicant's physical security plan (4 AEC at 855-56, 870). In so doing, that Board noted that there were no regulatory standards for evaluating the plan and found it necessary to establish conditions which would provide for protection of the public health and safety.

The requirement that licensees protect against potential sabotage appears to have been formalized in the regulation on November 4, 1973. On that date the AEC published final rules governing the physical protection of plants and materials. Among those rules was 10 CFR §73.40, a new provision, which read:

> Each licensee shall provide physical protection against industrial sabotage and against theft of special nuclear material at fixed sites where licensed activities are conducted. Security plans submitted to the Commission for approval shall be followed by the licensee after March 6, 1974. 38 Fed. Reg. 30537 at 30540.

This provision had not been included in the proposed amendments to Part 73, but a similar provision was included in proposed amendments to Part 50. (*See* 38 Fed. Reg. 3073 and 3082 (February 1, 1973).) In the proposed amendments to Part 73, proposed §73.1(c), labeled "Purpose and Scope," limited the applicability of Part 73 to Part 70 licensees. The rule proposed under Part 50 read:

> §50.55c Physical protection requirements for nuclear reactors.
>
> Each licensee authorized to operate a nuclear reactor shall provide appropriate protection against industrial sabotage.

The statement of considerations accompanying this proposal indicates that ". . . nuclear reactor licensees would be required to protect their facilities against industrial sabotage." The statement goes on to note that, in view of the imminent publication of a standard on this subject relating to power reactors by the American Nuclear Society, no detailed requirements were being specified. (*See* 38 Fed. Reg. 3073.)

The statement of considerations accompanying the promulgation of §73.40 does not specifically refer to proposed §50.55c. It does, however, note that the amendments to Part 73 consolidate all fixed-site physical protection requirements in Part 73. Accordingly, it is evident that proposed §50.55c was dropped in favor of §73.40.

While the statement of considerations accompanying proposed §50.55c indicates that the Commission was primarily concerned with power reactor licenses, it is obvious that both proposed §50.55c and §73.40 apply to all

licensees without limitations. The Appeal Board's hold in *Columbia, supra*, was in no way modified. We therefore conclude that when promulgated §73.40 was intended to apply to University reactors licensed pursuant to §104(c) of the Atomic Energy Act.

The question remains whether, in the course of adopting substantial amendments to Part 73, the Commission has modified the scope of §73.40. We begin our discussion by noting the fact that, although §73.40 itself has been amended, the first sentence of that section has been modified only once. That modification changed the term "industrial sabotage" to "radiological sabotage." The applicability of that sentence to all licensees has not been changed.

Promulgated with §73.40 were §§73.50 and 73.60. These contained specific requirements applicable to licensees who possessed a formula quantity of SSNM. In 1977, §73.55 was added, setting down specific requirements for the protection of power reactors against sabotage. (*See* 42 Fed. Reg. 10828 (February 24, 1977), as amended 42 Fed. Reg. 51607 (Sept. 29, 1977).)

Also in 1977, the Commission announced that it was considering amendments to Part 73 to strengthen the physical protection provided SSNM. In the statement of consideration accompanying the proposal, the Commission noted that the rules would apply to non-power reactor licensees possessing formula quantities of SSNM. The Commission also noted that the strengthened requirements, while designed to prevent theft, would also provide additional protection against sabotage. (*See* 42 Fed. Reg. 34310, (July 5, 1977).)

In response to comments received on this proposal, the Commission revised the proposal and published the revision for comment. (*See* 43 Fed. Reg. 35321 (August 9, 1978).) Some of the comments received indicated confusion with regard to the proposed regulations' applicability to research reactors. Generally, commenters believed that research reactors should not have to meet such stringent requirements, noting that in many cases the cost of such requirements might be prohibitive. In response to these comments, the Commission clarified its intent regarding coverage. In so doing the Commission noted that "[c]overage for research reactors having less than the formula quantity of strategic special nuclear material would continue . . . under §73.40." (43 Fed. Reg. at 35235.) At the time this statement was made, no specific provision of Part 73 governed research reactor licensees with less than a formula quantity of SSNM other than §73.40.

Also at the time the statement was made, there was pending another proposed amendment to Part 73 governing these particular licensees. This proposal, designed to provide protection against theft (*See* 43 Fed. Reg.

22216 (May 24, 1978)), ultimately led to the adoption of §73.67 of Part 73 (Adopted as §73.47, 44 Fed Reg 43280 (July 24, 1979), redesignated §73.67, 44 Fed. Reg. 68198 (Nov. 28, 1979).)

On adoption of this provision, the Commission noted that although the provision was designed to be equivalent to the international Atomic Energy Agency's recommendations contained in INFCIRC/225 Rev. 1, it did not provide for protection against sabotage. INFCIRC/225 Rev. 1, on the other hand, covered both theft and sabotage. (*See* 44 FR 43280 (July 24, 1979).) No explanation for this difference was offered. Nor was the coverage of §73.40 in any way limited.

After considering the comments received on its August 9, 1978, proposal (which dealt with physical protection for non-power reactor facilities possessing a formula quantity of SSNM), the Commission promulgated rules. These rules differed from the proposed rules in that non-power reactor licensees were not required to comply with the stringent requirements on which they had adversely commented as noted in the August 9 revised proposal. Rather, they were required to comply with §73.67(a), (b), (c), and (d), and, where applicable, §73.60. The latter section also required compliance with §73.40(b), (c), and (d). The Commission noted that this was an interim solution only, and that it intended to bring non-power reactor licensees under an improved regulatory system. (*See* 44 Fed. Reg. 68184 (November 28, 1979).)

No further substantive changes have been made in the regulations with which we are concerned. However, as noted above, the Commission has published a proposed rule to improve the safeguards system for non-power reactor licensees possessing a formula quantity of SSNM. (*See* 46 Fed. Reg. 46333 (September 18, 1981).) This proposal eliminates §73.60 and amends §73.67 to state specific requirements for these licensees. These requirements provide additional protection against theft of SNM. They omit any requirement that such licensees comply with §73.40(b), (c), and (d). And they make no change in the applicability of §73.40(a).

From the above we conclude that the provisions of §73.40(a), which have remained unchanged over a period of almost ten years despite substantial rulemaking on the subject of physical security, are applicable to Class 104(c) licensees. Where the Commission has set down detailed requirements, we conclude that these are intended to satisfy the general requirements of §73.40. Where no detailed requirements have been set out, we conclude that some measures nonetheless must be taken to satisfy the §73.40(a) general requirements.

In the instant case, assuming that there is (or will be) less than a formula quantity of SSNM on hand at the NEL, this means that UCLA must institute some means of providing physical protection against sabotage.

Because, under this assumption, §73.40(b), (c), and (d) and §73.60 are not applicable, these means necessarily must be less stringent than the requirements of those regulations. What these means should be is properly a subject for the parties to address.

I.

The foregoing discussion of Part 73 has ranged far beyond the arguments put forward by the parties and has addressed a complex portion of the regulations which may be charitably described as murky. Consequently the Board will entertain motions to reconsider its holdings set out in Sections B, C, and E above. Such motions must be filed by August 15, 1983. Responses in support of motions must be filed by August 25, 1983, and responses in opposition by September 12, 1983. No further responses will be considered without leave of the Board.

In consideration of all the foregoing, it is this 11th day of May, 1983,

ORDERED

1. Staff's Motion for Summary Disposition is denied.

2. Staff is to physically inventory the SNM on hand at the Nuclear Energy Laboratory at UCLA and report its findings to the Board and Parties as soon as reasonably possible.

3. The parties may comment on Staff's report under ¶2, indicating their views as to what if any further proceedings are necessary in light of the report within 15 days of the service of the report. Responses to the comments of any party may be filed by another party within five days of the service of the comments. No further response will be entertained absent a showing of good cause.

4. By August 15, 1983, any party may seek reconsideration of Sections B, C, and E of this Memorandum and Order. Responses in support of motions to reconsider must be filed by August 25, 1983, and responses in

opposition by September 12, 1983. Absent good cause shown, no further filings will be entertained.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Glenn O. Bright
ADMINISTRATIVE JUDGE

Emmeth A. Luebke
ADMINISTRATIVE JUDGE

John H Frye, III, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
May 11, 1983

U S NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date: February 29, 1984

Review of Document

On February 27, 1984, the attached Order and Memorandum and Order, both dated February 24, 1984, were received, unsolicited, via interoffice mail from the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the University of California at Los Angeles (UCLA) non-power reactor.

Within the Memorandum and Order, the Board expressed the concern "that substantial misrepresentations may have been made to it by UCLA and staff regarding sabotage matters raised by Contention XX." The Board goes on to cite the fact that in reference to sabotage protection "Throughout these proceedings until February 15, 1984, we had been lead(sic) to believe by counsel that first staff saw no requirement in the regulations that UCLA provide such protection and imposed no such requirement and second, that UCLA's security plan indeed provided no such protection."

The Board quotes from a UCLA August 25, 1983 "Response in Support of NRC Staff Petition for Reconsideration of the Licensing Board's Memorandum and Order Ruling on Staff's Motion for Summary Disposition" to wit: "University wishes to note that its security plan which is not designed to provide protection against sabotage, has been approved by the Commission's Safeguards Branch; and that the low-power university research reactor licensees have never been required to adopt security plans designed to protect against sabotage."

On page 4 and 5, the Board cites several more examples of misleading statements made by staff and staff counsel that led the Board to believe "that UCLA"s physical security plan was not designed to provide protection against sabotage and that staff did not require that such protection be provided. However, the security plan and security inspection reports furnished by UCLA indicate that the opposite is true."

The Board has required that Staff Counsel, Colleen Woodhead, and the UCLA attorneys demonstrate why action should not be taken against them for violation of "Model Rules of Professional Conduct 3.1, 3.3, 3.4 and 8.4" and answer the question of whether the Board "should take action against counsel pursuant to 10 CFR 2.713."

Attachments:
As stated

Investigation on February 28, 1984 at Bethesda, MD File # 84-9

By Ronald M. Smith, Investigator, OIA RMS Date dictated February 29, 1984

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U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTOR AND AUDITOR

Date of transcription March 12, 1984

Review of Reports

Inspection Reports from other reactor locations with the same type of reactor as that at the University of California at Los Angeles (UCLA), were requested from Regions II and III on March 2, 1984. The purpose was to review those physical security inspection reports to determine whether the inspections had included "Protection Against Radiological Sabotage" since 1979. Reports were received for Virginia Polytechnic Institute, University of Florida, and Iowa State University. The reports are attached hereto the order discussed below:

Report Nos. 50-83/82-01 and 70/1068/8201

This report addressed the inspection at the University of Florida for the period July 29-31, 1982. According to the summary the areas inspected included: "Locks, Keys and Combinations; Physical Barriers; and Detection Aids. There was no specific mention of protecting against radiological sabotage.

Report No. 50-124/83-01

This report addressed the inspection at Virginia Polytechnic Institute for the period November 28-29, 1983. Paragraph 13 of that report specifically addressed "Protection Against Radiological Sabotage" under I&E Inspection Manual Chapter 81455B.

Report Nos. 50-116/79-01 and 50-116/80-03

These reports addressed inspections at Iowa State University for the periods February 22-23, 1979 and October 15-16 1980, respectively. Both reports specifically noted inspection for "Protection Against Radiological Sabotage."

It is noted that a review of the inspection and Enforcement Manual does not indicate that the inspection module for "Protection Against Radiological Sabotage," MC 81455B has been superceded or rescinded - as apparently is born out by the most recent inspection of the Virginia Polytechnic Institute reactor.

Attachments:
As stated

Investigation on March 12, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA RMS Date dictated March 12, 1984

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U S NUCLEAR REGULATORY COMMISSION

Review of Materials

On February 17, 1984, Administrative Law Judge John Frye, III, provided three matters which he felt might be germane to our ongoing investigation concerning whether three NRC employees had misrepresented facts to or given false information to the Atomic Safety Licensing Board Panel (ASLBP) considering the relicensing of the nonpower research reactor at the University of California at Los Angeles (UCLA). The matters were:

1. Physical Security Plan for the UCLA facility, approved November 9, 1983.

2. A collection of Inspection Reports of various dates 1971 and 1983.

3. Copy of SECY 83-500, Subject: Clarification of General Physical Protection Requirement, dated December 6, 1983.

The significance of the first document is that the basic approved Physical Security Plan for UCLA dated March 1980 specifically states as one of the objectives (the first so listed) is "to provide protection against acts of radiological sabotage to the reactor, its associated equipment, and to SNM." To achieve that objective, the plan "prevents or delays unauthorized actions against this facility" (page iii). Further, references to measures to protect against theft or sabotage are found at pages 1-1, 1-4, 1-5, 2-1, 3-1, 3-4, 4-1, and 5-1. Additionally, the "Response Procedures" includes "Radiological Sabotage" as an event requiring response and provides specific actions in response to such an event.

The inspection reports contain some general and some specific (page 3 of the report dated 6/3/75) references to failures to protect against sabotage. Sabotage as an inspection item is again addressed in August 1976, October 1977, December 1978, and October 1979. It is noted that the 1978 and 1979 inspection reports had specific sections within them which addressed "Protection Against Radiological Sabotage."

The SECY paper (83-500) is intended to remove the general requirement of Section 73.40(a), as currently written except when specific requirements have also been written. In other words, apparently there would only be a general requirement when there was also a specific requirement for protection against sabotage.

Attachments:
As stated

Investigation on February 17, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA RMS Date dictated February 23, 1984

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription: March 27, 1984

Report of Interview

Donald M. Carlson, Plant Protection Analyst, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Materials Safety and Safeguards, upon reinterview and as a followup to his previous interview (see Report of Interview dated March 1, 1984), provided the following information:

When apprised that his affidavit of March 9, 1984, appeared in certain particulars to be in contradiction with the fact that the Office of Inspection and Enforcement (IE) still has an inspection requirement and module which address protection against radiological sabotage and that, in fact, such inspections have been carried out as recently as November 1983, Mr. Carlson said that he was unaware of either the inspection requirement or the fact that inspections had been conducted. He offered that the Office of Inspector and Auditor would have to check with IE to learn why they had the chapter and had conducted the inspections. He still maintained that it was and had been the intent of his office (Safeguards) that there was no requirement to protect against radiological sabotage since the adoption of Section 73.67 in 1979.

In summary, Mr. Carlson still maintains that his affidavits are true to his knowledge and offered that he is willing to go on the "machine" (polygraph) to back up that contention.

(Investigator's Note: The Carlson affidavit reference above is an attachment to the "NRC Staff Response to Allegations of Misrepresentation Made by the Atomic Safety and Licensing Board" dated March 9, 1984, and filed before the ASLBP under Docket No. 50-142 that same date.)

Investigation on March 15, 1984 at Silver Spring, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated March 16, 1984

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U S NUCLEAR REGULATORY COMMISSION

Date of transcription: March [illegible], 1984

Report of Interview

Russell R. Rentschler, Section Chief, Physical Security Licensing Section, Fuel Facility Safeguards Licensing Branch, Division of Safeguards, Nuclear Material Safety and Safeguards, upon interview concerning a possible false statement to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:

When asked about the apparent contradiction between his affidavit of March 8, 1984, presented to the ASLBP* and the fact that the Office of Inspection and Enforcement (IE) has an inspection chapter and module which address "Protection Against Radiological Sabotage" and has inspected facilities under them as recently as November 1983. Mr. Rentschler said that he was not aware of IE Manual Chapter 2545 (containing sabotage inspection requirement) in detail, but was working with Nancy Ervin (Operating Reactor Programs Branch, Division of Reactor Programs, IE) to get the chapter revised. He was not aware of any inspection reports like those on Virginia Polytechnic Institute and Iowa State University which indicate inspections for protection against radiological sabotage were conducted as recently as November 1983.

He expressed the view that with the adoption of section 73.67 (10 CFR), it was and has been Safeguards' view that 73.40 only applies to power reactors. He did acknowledge that 73.40 did originally apply to both power and nonpower reactors.

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*Mr. Rentschler's affidavit is an attachment to the "NRC Staff Response to Allegations of Misrepresentation Made by the Atomic Safety and Licensing Board" dated March 9, 1984).

Investigation on March 15, 1984 at Bethesda, MD File # 84-9

By Ronald M. Smith, Investigator, OIA Date dictated March 20, 1984

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of Transcription: [illegible]

Report of Interview

Loren Bush, Senior Security Specialist, Operating Reactor Programs Branch, Division of Quality Assurance, Safeguards and Inspection Programs, Office of Inspection and Enforcement (IE), upon interview concerning possible misstatements by U.S. Nuclear Regulatory Commission (NRC) employees before the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the non-power reactor at the University of California at Los Angeles (UCLA), provided the following information :

A copy of a September 1980 memorandum (Attachment A), was provided by Bush which announced the discontinuance of inspections at power reactors, fuel cycle facilities and irradiated fuel shipments.

In a brief discussion of IE Manual Chapter 2545, dated January 27, 1984 (Attachment B), it was noted that Table 5 of the Chapter indicates an inspection procedure (#81455) addressing Protection Against Radiological Sabotage which is currently applicable only to facilities with nuclear material of high strategic significance. Table 5 also indicates that the 81N00 Series is applicable to facilities with materials of moderate or low strategic significance. Table 2 confirms 81N00 Series as the inspection procedures for such facilities as the University of Florida, Virginia Polytechnic Institute, and UCLA. The 81N00 procedures have not been formally issued, although a draft version dated September 18, 1980, was sent to the field for their use in May 1981 (see Attachment C). That same memo directed continued use of the 81400 Series for Category I non-power reactors (high strategic significance) and 81N00 Series for Category II and III non-power reactors (moderate and low strategic significance).

Extracts of Procedures 81N22 and 81N38 (Attachments D and E, respectively) also were provided. Procedure 81N22 contains reference to 10 CFR 73.40(a) twice and the term "radiological sabotage" once. Meeting the requirements of Section 73.40(a) as a goal or objective is conditioned on requirements in the Physical Security Plan (PSP) submitted by the licensee. No further reference to protection against radiological sabotage is made in that procedure. Procedure 81N38 contains even briefer reference to "radiological sabotage" and then only in terms of meeting the reporting requirements of 10 CFR 73.71(b).

* The interview of Mr. Bush was conducted in the presence of his supervisor, Phillip F. McKee, Chief, Operating Reactor Programs Branch, and Nancy Ervin, Security Specialist, within the same branch.

Investigation on April 16, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated April 19, 1984

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with regionalization, two reorganizations by IE that gave responsibilities for these matters to others, the above referenced discontinuance of inspections, and the low priority given the NPR (non-power reactor) program, Bush was not familiar with the previous inspection results which specifically addressed protection against radiological sabotage under inspection procedure 81455. Likewise, he was not aware of the reference in the 1980 Annual Report for the NRC (extract at Attachment F) which, as issued in March 1981, stated that "(a) all licensed non-power reactors have operative security plans as required by 10 CFR 73.40 ('Physical Protection: General Requirements at Fixed Sites') for protection against sabotage."

When asked about the various inspection reports (see Review of Reports, dated March 13, 1984) which specifically addressed protection against radiological sabotage (Virginia Polytechnic Institute and Iowa State University), Bush noted that the 1982 inspection of the University of Florida used the correct procedures (81N00 Series); the 1983 inspection of VPI used the incorrect procedures (81400 Series); and that the 81400 Series was correctly used during the 1980 inspection of Iowa State. However, he further advised that a current inspection there should use the 81N00 Series. The inspection report format specifies that the inspector must identify the title of the "IPs" (Inspection Procedures) under which the inspection was performed, to include a brief description of specific inspection activities. Upon further examination of the VPI report, Bush concluded that once the wrong procedures were used, the inspector compounded the problem by "forcing" the inspection activities under the paragraph on protection against sabotage. It was assumed by Bush that this was done so that the 766 System (computer program where inspectors record inspection time by Inspection Procedure) could show that all procedures had been completed. Because inspection programs and procedures are generic in nature, the proper action would have been to exclude IP81455 from the inspection report and to indicate in the 766 System that the procedure had been closed with 0% completed.

Note: A subsequent check by Bush with David McGuire, Region II, disclosed that the reason that the 81400 Series were used at VPI was because of the Authorized Possession Limits, rather than Actual Inventory as set forth in Manual Chapter 2545. This was the approach intended to be used prior to issuance of Manual Chapter 2545 in January 1984. Since January 1984, inspection procedures are intended to be applied based on actual possession of material not exempted under 10 CFR 73.6 (100 rem/hour at 3 feet).

It was Bush's view (as verified by McKee and Ervin) that NMSS (Carlson) was correctly stating the NRC position that, with the promulgation of Section 73.67, there no longer was a requirement for NPRs to provide protection against radiological sabotage under Section 73.40(a). In an attempt to explain how this position could be accommodated with the fact that there were still plans which addressed protection against radiological sabotage and inspection reports which reported on the same subject as recently as November 1983 (Virginia Polytechnic Institute), the following scenario, which includes information provided by Bush, was presented to him for comment:

> In 1979, NMSS promulgated what became the current Section 73.67 which addressed the theft protection requirements generally raised in Section 73.40(a). NMSS viewed 73.67, with its specific requirements, as superseding the theft portion of 73.40(a). Because of the results of a classified

study, NMSS determined that with possibly, very few exceptions, there was no radiological sabotage risk and, therefore, believed that that portion of 73.40(a) was no longer operative. However, NMSS did not appropriately modify or delete Section 73.40(a). As more recently argued by NMSS (Carlson, for example), some licensees submitted security plans using a pre-73.67 physical security plan sample. Because NMSS will accept commitments beyond that specified in the rules, the plan was approved containing the words "radiological sabotage". The issue was further complicated when NMSS, in communicating approval of the plan, directed adherence by the licensee with the plan, but with no qualification on the additional issues (radiological sabotage) included in the plan.

Under IE practice, inspectors are required to inspect "against the plan." However, any use of 81455, whether proper or improper under the existing program structure, compounded the impression that NMSS was stating one position while IE was seemingly demonstrating another via its inspection reports.

Thus, the failure of NMSS to modify/delete Section 73.40(a) and their willingness to approve security plans with no longer needed requirements while at the same time requiring adherence to the plans, coupled with the IE practice/requirement to "inspect against the plan" and the existence of IP 81455, "Protection Against Radiological Sabotage", has resulted ultimately in the conclusion by some that part of the NRC (NMSS) is saying one thing while another part (IE) is engaged in acts (reports) which clearly illustrate the opposite position.

Bush (concurred in by McKee and Ervin) agreed that the scenario did seem to explain what could have happened and further observed that he then understood how the Board, the intervenor, and this investigator could question earlier statements by the NRC staff to the ASLBP.

Attachments:
As Stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
Washington, D.C. 20555

INSPECTION AND ENFORCEMENT MANUAL

CHAPTER 2545

RESEARCH AND TEST REACTOR INSPECTION PROGRAM - OPERATIONS PHASE

2545-01 PURPOSE

The purpose of the Research and Test Reactor Inspection Program is to establish a basis for concluding that the facility is operated and activities therein are conducted safely and consistent with regulatory requirements. This conclusion is developed through direct observation, personnel interviews, and review of facility records.

2545-02 PROGRAM APPLICABILITY

The operations phase applies to all critical facilities and to research and test reactors that have been issued an operating license. In the special case in which a facility has an operating license and does not operate, the inspection effort shall be reduced to completion of the long-term shutdown program. A facility shall be considered to be in an operating status if work associated with the reactor is the reason for it being shut down, e.g., refueling, modification, and maintenance.

2545-03 DEFINITIONS*

03.01 Research Reactor. As used in this chapter, research reactor is a broad term that includes test reactors, critical facilities, plus all of the other non-electricity-producing reactors subject to NRC regulation.

03.02 Test Reactor. Refers to reactors that were issued test reactor licenses and includes NBS and GETR.

03.03 Critical Facilities. Refers to facilities that were issued critical licenses and includes such facilities as B&W (50-13), Battelle (50-360), and Rensselaer (50-225).

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*See Section 2545-09 for a list of abbreviations used in this chapter and in related procedures.

b. Biennial (BA)

The effort should normally be performed at least once every two years for an operations or safeguards inspection. This cycle would apply to Class II reactors or facilities possessing material of moderate strategic significance.

c. Triennial (TA)

The inspection effort should normally be performed at least once every three years. This cycle would apply to Class III reactors or facilities possessing material of low strategic significance.

2545-04 RESPONSIBILITIES AND AUTHORITIES

04.01 Director, Appropriate Regional Office Division. Overall administration and implementation of the inspection program outlined in this chapter for research reactors within regional boundaries.

04.02 Chief, Project Branch (Regional Office). Administration and implementation of the inspection program outlined in this chapter for research reactors assigned.

04.03 Section Chief (Regional Office). Administration and implementation of the inspection program outlined in this chapter for research reactors assigned.

2545-05 DISCUSSION

This chapter provides guidance for the scheduling of inspections and provides guidance regarding the implementation of the inspection program. The program establishes uniform inspection methodology for each reactor class and safeguards category and leaves sufficient flexibility to the regions for optimizing the utilization of their inspection resources. Experience has shown that the extent of the inspection program is based on demands placed on available inspection resources. For that reason this chapter defines the minimum inspection program for a determination of acceptable operation.

The operations portion of the inspection program emphasizes the larger reactors (e.g., 2 Mw or greater). These reactors are considered Class I facilities and should be inspected annually. Smaller operating reactors should be considered Class II facilities and be inspected biennially. Other reactors, either decommissioned or on indefinite shutdown, are considered Class III facilities and shall be inspected triennially.

The safeguards and security portion of the inspection program would place most emphasis on reactors possessing high levels of strategic nuclear

As stated in 10 CFR and elsewhere in this Manual (IE 2500), NRC inspectors perform a basic mission in determining that a licensee meets current regulatory requirements and commitments. Identifying specific instances where a licensee fails to meet such requirements and commitments, although important, has frequently in the past resulted in correction of symptoms rather than correction of underlying causes of licensee problems. Because of the limited number of inspectors, the NRC inspection program offers only a very small sample of licensee activities in an area. Thus, it is important that an inspector evaluate whether a noted noncompliance or deficiency represents an isolated case or may signify a broader, more serious problem in that area. To provide the perspective to perform this evaluation, the inspector should:

a. Keep currently informed of deficiencies, audit findings, and plant problems identified by the licensee's own organization.

b. Ascertain whether additional personal inspection effort is merited in the area under consideration.

Where the evidence indicates that a problem may exist, enforcement action should be employed to require the licensee to demonstrate to the NRC that he has not lost control of that area. Regional supervision should be consulted whenever such enforcement action appears appropriate to the individual inspector.

2545-09 ABBREVIATIONS USED IN THIS CHAPTER AND IN RELATED PROCEDURES

AFRRI	Armed Forces Radiobiology Research Institute
AGN	Aerojet General Nucleonic
ANS	American Nuclear Society
ANSI	American National Standards Institute
B&W	Babcock and Wilcox
DBE	design-basis event
DQASIP	Division of Quality Assurance, Safeguards, and Inspection Programs, IE
EP	emergency planning
GETR	General Electric Test Reactor, Vallecitos, CA
HP	health physics
HSNM	high [levels of] strategic nuclear material
IE	Office of Inspection and Enforcement, NRC
LCO	limiting condition for operation
LER	licensee event report
LLNL	Lawrence Livermore National Laboratory
LSNM	low [levels of] strategic nuclear material
MIT	Massachusetts Institute of Technology
MSNM	moderate [levels of] strategic nuclear material
n/a	not applicable
NBS	National Bureau of Standards, Gaithersburg, MD
NRC	U.S. Nuclear Regulatory Commission

Region I

TABLE 1 RESEARCH AND TEST REACTORS: LICENSE AND POWER LEVEL

LICENSEE AND ADDRESS	TYPE REACTOR	DOCKET NUMBER	LICENSE NUMBER	LICENSE ISSUED	POWER LEVEL (KW)	CLASS
Defense Nuclear Agency Armed Forces Radiobiology Research Institute (AFRRI) Bethesda, MD 20814	TRIGA	50-170	R-84	6/16/62	1000	II
Catholic University Dept. of Nuclear Science 620 N. Michigan Ave. NE Washington, DC 20017	AGN	50-77	R-31	8/29/66	0.0001	II
Columbia University Div. of Nuclear Sci. & Eng. New York, NY 10027	TRIGA*	50-208	R-128	4/14/77	250	III
Cornell University Nuclear Reactor Lab. Ithaca, NY 14850	Tank (ZPR)	50-97	R-89	12/11/62	0.1	III
Cornell University Nuclear Reactor Lab. Ithaca, NY 14850	TRIGA	50-157	R-80	1/11/62	500	II
Manhattan College Mechanical Eng. Dept. Riverdale, NY 10471	Tank	50-199	R-94	3/24/64	0.0001	II

*No current inventory - Shut down indefinitely.

Issue Date: 01/27/84

RESEARCH REACTOR INSPECTION PROGRAM - OFFICE OF INSPECTION AND ENFORCEMENT

TABLE 1 (Cont'd)

Region I (Cont'd)

LICENSEE AND ADDRESS	TYPE REACTOR	DOCKET NUMBER	LICENSE ISSUED	DATE LICENSE	POWER LEVEL (KW)	CLASS
State Univ. of NY at Buffalo Nuclear Sci. & Tech. Facility Rotary Rd. Buffalo, NY 14214	Pool	50-57	R-77	3/24/61	2000	I
Union Carbide Corp. Sterling Forest Res. Ctr. PO Box 324 Tuxedo, NY 10987	Pool	50-54	R-81	9/7/61	5000	I
University of Lowell Dept. of Physics Lowell, MA 01854	Pool	50-223	R-125	12/24/74	1000	II
University of Maryland School of Eng. College Park, MD 20740	TRIGA	50-166	R-70	2/22/74	250	II
Worcester Polytech Inst. Nuclear Reactor Facility, Worcester, MA 01609	Pool	50-134	R-61	12/15/59	10	II

TABLE 1 (Cont'd)

Region II (Cont'd)

LICENSEE AND ADDRESS	TYPE REACTOR	DOCKET NUMBER	LICENSE ISSUED	DATE LICENSE	POWER LEVEL (KW)	CLASS
University of Virginia Dept. of Nuclear Eng. Charlottesville, VA 22901	Pool	50-62	R-66	6/27/60	2000	II
University of Virginia Dept. of Nuclear Eng. Charlottesville, VA 22901	Pool Cavalier	50-396	R-123	9/24/74	0.1	II
Virginia Polytechnic Inst. Dept. of Physics Blacksburg, VA 24061	Argonaut	50-124	R-62	12/18/59	100	II

TABLE 1 (Cont'd)

Region III (Cont'd)

LICENSEE AND ADDRESS	TYPE REACTOR	DOCKET NUMBER	LICENSE NUMBER	LICENSE ISSUED	POWER LEVEL (KW)	CLASS
University of Illinois Nuclear Eng. Program 214 Nuclear Eng. Lab. 103 S. Goodwin Avenue Urbana, IL 61801	Pool	50-356	R-117	12/7/71	10	II
University of Michigan Phoenix Memorial Lab. Ford Nuclear Reactor Ann Arbor, MI 48109	Pool	50-2	R-28	9/13/57	2000	I
University of Missouri Research Reactor Facility Columbia, MO 65201	Pool	50-186	R-103	10/11/66	10,000	I
University of Missouri School of Mines & Metallurgy Rolla, MO 65401	Pool	50-123	R-79	11/21/61	200	II
University of Wisconsin Reactor Lab. 130 Mechanical Engineering Building Madison, WI 53706	TRIGA	50-156	R-74	11/23/60	1000	II
Westinghouse Electric Corp. Nuclear Training Center 505 Shiloh Blvd. Zion, IL 60099	Pool	50-87	R-119	1/28/72	10	II

TABLE 1 (Cont'd)

Region IV (Cont'd)

LICENSEE AND ADDRESS	TYPE REACTOR	DOCKET NUMBER	LICENSE NUMBER	LICENSE ISSUED	POWER LEVEL (KW)	CLASS
University of Texas Nuclear Reactor Lab. Austin, TX 70712	TRIGA	50-192	R-92	8/2/68	250	II
University of Utah College of Engineering Salt Lake City, UT 84112	AGN-201	50-72	R-25	6/20/68	0.005	II
University of Utah College of Engineering Salt Lake City, UT 84112	TRIGA	50-407	R-126	9/30/75	1000	II
U.S. Geological Survey Dept. of the Interior Denver, Colorado 80225	TRIGA	50-274	R-113	2/24/69	1000	II
Veterans Administration Medical Center 4101 Wolworth Avenue Omaha, NB 68105	TRIGA	50-131	R-57	4/19/68	18	II

TABLE 1 (Cont'd)

Region V (Cont'd)

LICENSEE AND ADDRESS	TYPE REACTOR	DOCKET NUMBER	LICENSE NUMBER	LICENSE ISSUED	POWER LEVEL (KW)	CLASS
Reed College Reactor Facility Portland, OR 87202	TRIGA	50-288	R-112	7/2/68	250	II
Rockwell Intnl. Corp. PO Box 309 Canoga Park, CA 91304	L-85	50-375	R-188	1/5/72	0.003	II
Univ. of California at Santa Barbara Dept. of Chemical & Nuclear Eng. Santa Barbara, CA 93106	L-77	50-433	R-124	12/3/74	0.01	III
University of Arizona Nuclear Reactor Lab. Tucson, AZ 85721	TRIGA	50-113	R-52	11/2/69	100	II
University of California at Los Angeles School of Engineering Los Angeles, CA 90024	Argonaut	50-142	R-71	10/3/60	100	II
University of California at Berkeley Dept. of Nuclear Eng. 381 Cowell Memorial Hosp. Berkeley, CA 94720	TRIGA	50-224	R-101	8/10/66	1000	II

RESEARCH REACTOR INSPECTION

TABLE 2 RESEARCH AND TEST REACTORS: SAFEGUARDS CATEGORIES

Region I

LICENSEE	ACTUAL INVENTORY (BASED ON SECURITY PLAN)	DATE PLAN APPROVED BY	INSPECTION PROCEDURES	AUTHORIZED INVENTORY
AFRRI	low	2/10/81	81N00	low
Catholic University	n/a	3/25/81	--	n/a
Columbia University	low	no approval	81N00	low
Cornell University (ZPR)	low	no approval	81N00	moderate
Cornell University (TRIGA)	low	no approval	81N00	low
Manhattan College	moderate	no approval	81N00	moderate
MIT	moderate	3/11/82	81N00	high
NBS	moderate	no approval	81N00	high
Pennsylvania State University	low	11/25/81	81N00	low
Rensselaer Polytechnic Inst.	moderate	no approval	81N00	high
Rhode Island AEC	moderate	5/12/81	81N00	high
State University of NY	moderate	no approval	81N00	low
Union Carbide Corporation	moderate	no approval	81N00	high
University of Lowell	moderate	8/10/81	81N00	moderate

TABLE 2 (Cont'd)

Region II

LICENSEE	ACTUAL INVENTORY (BASED ON SECURITY PLAN)	DATE PLAN APPROVED BY	INSPECTION PROCEDURES	AUTHORIZED INVENTORY
Babcock & Wilcox (Crit. Exp.)	moderate	7/22/82	81N00	moderate
Georgia Inst. of Tech. (Tank)	moderate	10/29/81	81N00	high
Georgia Inst. of Tech. (ACN)	n/a	no approval	--	low
Memphis State U.	low	6/1/81	81N00	low
North Carolina State U.	low	no approval	81N00	low
Tuskegee Institute	n/a	5/19/81	--	n/a
University of Florida	moderate	6/2/81	81N00	moderate
University of Virginia	moderate	8/25/81	81N00	moderate
University of Virginia (Cavalier)	moderate	8/25/81	81N00	low
Virginia Polytechnic Inst.	moderate	4/24/81	81N00	high

TABLE 2 (Cont'd)

Region IV

LICENSEE	ACTUAL INVENTORY (BASED ON SECURITY PLAN)	DATE PLAN APPROVED BY	INSPECTION PROCEDURES NRR	AUTHORIZED INVENTORY
Brigham Young University	low	12/5/74	81N00	low
Idaho State University	n/a	5/13/81	--	n/a
Kansas State University	low	9/11/81	81N00	low
Texas A&M (AGN)	low	no. approval	81N00	low
Texas A&M (TRIGA)	moderate	1/21/81	81N00	high
University of Kansas	moderate	2/23/82	81N00	moderate
University of New Mexico	n/a	no approval	--	n/a
University of Oklahoma	n/a	no approval	--	n/a
University of Texas	low	no approval	81N00	low
University of Utah (AGN)	low	10/17/80	81N00	n/a
University of Utah (TRIGA)	low	10/17/80	81N00	low
U.S. Geological Survey	low	6/3/82	81N00	low
Veterans Administration Hosp.	low	2/6/81	81N00	low

TABLE 2 (Cont'd)

Region V

LICENSEE	ACTUAL INVENTORY (BASED ON SECURITY PLAN)	DATE PLAN APPROVED BY	INSPECTION PROCEDURES NRR	AUTHORIZED INVENTORY
University of California @ Los Angeles	moderate	no approval	81N00	high
University of California @ Santa Barbara	moderate	4/3/81	81N00	low
University of Washington	moderate	no approval	81N00	moderate
Washington State U.	moderate	no approval	81N00	high

TABLE 3 FREQUENCY OF INSPECTIONS

	MATERIAL			
CLASS	H	M	L	N/A
I	(O/S) A/A	(O/S) A/B	(O/S) A/T	(O) A
II	(S/A)	B/B	B/T	B
III	T/A	T/B	T/T	T

Symbols

H - HSNM - High Strategic Nuclear Material
M - MSNM - Moderate Strategic Nuclear Material
L - LSNM - Low Strategic Nuclear Material
N/A - Not Applicable (AGNs)
O - Operations Inspection (Based on Maximum Power Level)
S - Safeguards Inspection (Based on Actual Inventory)
A - Annual
B - Biennial
T - Triennial
I, II, III - Classes of Reactor Power

TABLE 5 RESEARCH REACTOR SAFEGUARDS INSPECTION PROGRAM
81400 SERIES: SPECIAL NUCLEAR MATERIAL

STRATEGIC SIGNIFICANCE/PROCEDURE NUMBER	TITLE
HSNM*	
81405	Security Plan
81410	Protection of SNM
81415	Security Organization
81420	Access Control
81425	Alarm System (Security)
81430	Keys, Locks, and Hardware (Security)
81435	Communications (Security)
81440	Surveillance (Security)
81445	Procedures (Security)
81450	Security Program Review
81455	Protection Against Radiological Sabotage
MNSM* and LSNM*	
81N00 Series	General Requirements for MSNM Fixed Sites
81N00 Series	General Requirements for LSNM Fixed Sites
HSNM,* MNSM,* and LSNM*	
To be determined	Materials Control and Accounting
92706	Independent Inspection Effort

*Note: HSNM = Nuclear Material of High Strategic Significance
MSNM = Nuclear Material of Moderate Strategic Significance
LSNM = Nuclear Material of Low Strategic Significance

Table 6 Categories of Special Nuclear Material

Materials	Enrichment	High	Moderate	Low
1. Pu	--	2000 g or more	<2000 g but >500 g	500 g or less but >15 g
2. U-235	20% or more in U-235 isotope	5000 g or more	<5000 g but >1000 g	1000 g or less but >15 g
	10% or more but <20%	--	10,000 g or more	<10,000 g but >1000 g
	Above natural but <10%	--	--	10,000 g or more
3. U-233	--	2000 g or more	<2000 g but >500 g	500 g or less but >15 g
4. U-233, U-235, and Pu, in combination	U-235 portion enriched to 20% or more	5000 g or more computed by the formula:	<5000 g according to the formula:	1000 g or less according to the formula:
		g = (g contained U-235) + 2.5 (g U-233 + g Pu)	g = (g contained U-235) + 2.5 (g U-233 + g Pu),	g = (g contained U-235) + 2.0 (g U-233 + g Pu),
			but >1000 g according to formula:	but >15 g according to the the formula:
			g = (g U-235) + 2.0 (g U-233 + g Pu)	g = (g contained U-235) + g (U-233 + g Pu)

1. The following materials are exempt:
   a. Special nuclear material that is not readily separable from the radioactive material and that has a total external radiation dose rate in excess of 100 rem/hr at a distance of 1 ft from any accessible surface without intervening shielding.
   b. Plutonium with an isotopic concentration of 80% or more in Pu-238.
   c. Sealed Pu Be neutron sources containing 500 g or less of contained Pu at any one site or contiguous sites.
2. One facility may have a combination of Category II or III materials and still remain in that category (i.e., 100-4999 g 20% enriched plus U 233, 10,000 g 20% enriched U 233 is Category III).

DRAFT

Physical Protection Inspection Module: Nonpower/Research Reactors

Security Organization Procedure No. 81N22

September 18, 1980

Prepared for the
Division of Safeguards, Fuel Cycle, and Environmental Research
Office of Nuclear Regulatory Research
and
Division of Safeguards Inspection
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Under a Memorandum of Understanding with the
U.S. Department of Energy and
NRC FIN No. A-0143

Inspection Methods for Physical Protection Project
Nuclear Systems Safety Program
Lawrence Livermore National Laboratory
Livermore, California 94550

2.0 INSPECTION REQUIREMENTS

The regulatory requirements for establishing and maintaining a security organization are set forth in 10 CFR Part 50, paragraphs 34(c) and 54(p); Part 70, paragraph 22(k); and Part 73, paragraphs 40(a), 60(a)(4 and 5), and 67(a)(1 and 2), (c)(1), (d)(8 and 11), and (f)(3 and 4). Since the regulatory requirements differ for each category of facility, the inspector must inspect against the specific commitments made in the PSP. The inspector should also note the SSNM facilities are required to prepare and maintain a Safeguards Contingency Plan. This procedure does not cover Safeguards Contingency Plans; an inspection guidance module is being developed for evaluating the implementation of such plans.

2.1 Verify that the licensee has designated a person or persons to act as Security Management (as defined in 73.2(v)), responsible for assuring that the security organization and response procedures are maintained as specified in the PSP, to meet the requirements of 10 CFR 50.34(c), 50.54(p), 70.22(k), 73.40(a) and 73.67(a).

2.2 Verify that all members of the security organization have been instructed as to the scope of their duties, and trained to perform the duties assigned. There is no specific requirement for this in the regulations, rather, both instruction and training are implied by the requirements to establish a security system capable of deterring and detecting theft of SNM and preventing radiological sabotage (10 CFR 73.40(a) and 73.67(a).

2.3 Verify that all response force personnel have been instructed as to the scope of their duties, and trained to perform the duties assigned. See 2.2 above for the regulatory authority.

DRAFT

Physical Protection Inspection Module: Nonpower/Research Reactors

Records and Reports
Procedure No. 81N38

September 18, 1980

Prepared for the
Division of Safeguards, Fuel Cycle, and Environmental Research
Office of Nuclear Regulatory Research
and
Division of Safeguards Inspection
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Under a Memorandum of Understanding with the
U.S. Department of Energy and
NRC FIN No. A-0143

Inspection Methods for Physical Protection Project
Nuclear Systems Safety Program
Lawrence Livermore National Laboratory
Livermore, California 94550

2.1.3 Verify that the licensee, if previously engaged in a trace investigation of lost or unaccounted-for shipments of SNM, has, within 15 days, filed a written report with the appropriate Regional Office and with the Director, Office of Inspection and Enforcement (D-IE) that provides details of the investigation and states its results, to meet the requirements of 10 CFR 73.71(a).

2.1.4 Verify that the licensee has, within 15 days filed a written report with the appropriate Regional Office and with the D-IE giving details of any incident, or suspected incident, of theft or unlawful diversion of SNM, or act or radiological sabotage, to meet the requirements of 10 CFR 73.71(b).

2.2 Records

2.2.1 Verify that the SSNM licensee has records documenting response arrangements made with local law enforcement agencies to meet the requirements of 10 CFR 73.40(d).

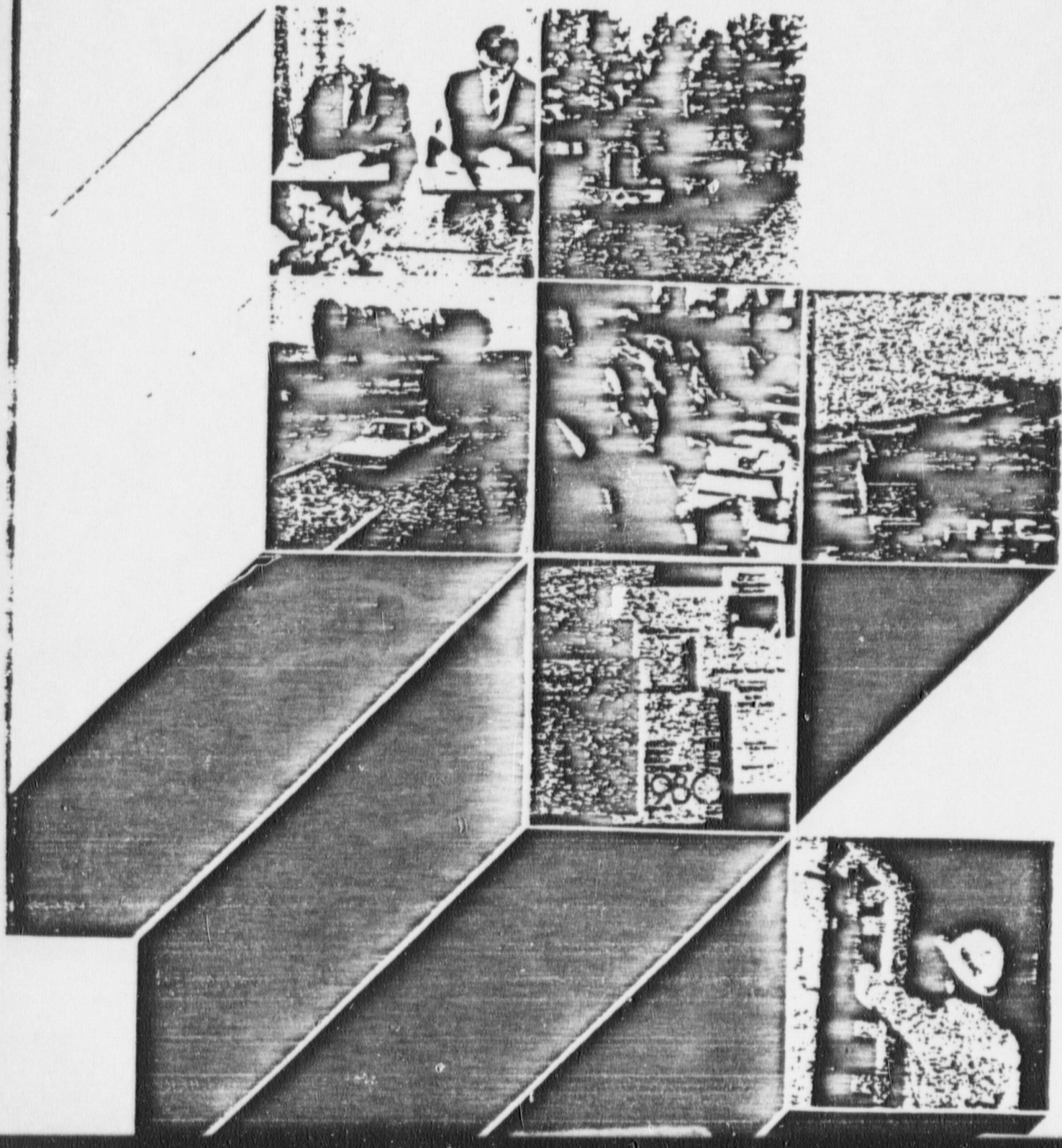
2.2.2 Verify that the SSNM licensee has records documenting the names and addresses of all individuals designated as authorized, individuals to meet the requirements of 10 CFR 73.70(a).

2.2.3 Verify that the SSNM licensee has records documenting the names, addresses, and badge numbers of all individuals authorized access to vital equipment or SNM, and the specific vital areas and material access areas (MAA) to which access was authorized, to meet the requirements of 10 CFR 73.70(b).

2.2.4 Verify that the SSNM licensee has on record a register of visitors, vendors, and nonemployees granted access to the facility, to meet the requirements of 10 CFR 73.70(c).

U.S. NUCLEAR
REGULATORY COMMISSION

1980
Annual Report



Shipments of Categories II and III Material. About 15 shipments of Category II material were made during fiscal year 1980. (Shipments of Category III materials are not monitored and recorded on a continuing basis.)

New requirements for the physical protection of Category II/III shipments (10 CFR 73.67, "Licensee Fixed Site and In-Transit Requirements for the Physical Protection of Special Nuclear Material of Moderate and Low Strategic Significance") became effective during the year, with implementation required by September 21, 1980. In response, 16 licensees submitted transportation protection plans for review and approval, of which about half had been approved by the end of the fiscal year.

Transport Inspection and Enforcement. During the year, NRC determined the adequacy of transportation safeguards both by licensing evaluation of physical protection plans for materials in-transit and by inspection of selected shipments. Inspections covered all domestic shipments and the domestic segments of import and export shipments of formula quantities of SSNM. Such inspections included all in-transit portions, intermodal transfers and periods of temporary storage. Of 126 shipments of irradiated fuel, both domestic and imports, made in 1980, 86 were inspected at the point of origin or the point of destination. No items of noncompliance with transportation safeguards requirements were noted. (See Table 2 for a summary of transportation inspection activity.)

Reactor Safeguards

Status of Safeguards at Power Reactors. NRC requirements for physical security at power reactor facilities were, for the most part, unchanged during fiscal year 1980. The adequacy of safeguards at such facilities was determined through the licensing process and the ongoing reactor safeguards inspection program.

Power reactor licensees have security programs in effect that are based on NRC-approved security plans prepared in response to 10 CFR 73.55, "Re ments for Physical Protection of Licensed Ac in Nuclear Power Reactors against Radiologica tage." As indicated in the *1979 NRC Annual R* the implementation of certain defensive mea against potential sabotage by personnel w inside the facility has been deferred by the Cor sion until further evaluations of need and po alternative measures are completed. These ev tions are still underway. On a related matter Commission has requested the staff to prepare a posed rule for public comment that would re the establishment of an industry-operated pro for determining the trustworthiness of perso authorized for entry to nuclear power plants.

There continue to be delays at certain facili the installation and operation of specific sec equipment, thereby requiring the use of appr temporary measures pending final system imple tation. The use of such temporary measures, suc additional security personnel, does not relieve individual licensee from its commitment to com and operate all of the final security systems and cedures described in the security plans. To en timely completion of the outstanding items on system implementation, the NRC drafted an ac plan towards the end of the year.

The NRC staff has been developing techni and plans for a program of assessing vulnerabili operating power reactors. Efforts during the re period included a "paper exercise" involvin Standardized Nuclear Unit Power Plant Syst (SNUPPS) hypothetical reactor facility and two t of the detailed assessment methodology at an ope ing reactor. The staff plans to begin the progra ing fiscal 1981, scheduling vulnerability assessm for those operating power reactors which have f implemented NRC-approved physical protec plans and have demonstrated subsequent satisfac compliance with them.

Status of Safeguards at Non-Power Reactors. licensed non-power reactors have operative secu plans as required by 10 CFR 73.40 ("Physica P

Table 3. Reactor Safeguards Inspections During FY 1980*

Facility	Number of Safeguards Inspections/ Visits	Number of Inspection Manhours	Number of Items of Noncompliance	Percent of Unannounced Inspection
Power Reactor	235	10,878	322	92%
Non-Power	55	928	04	89%

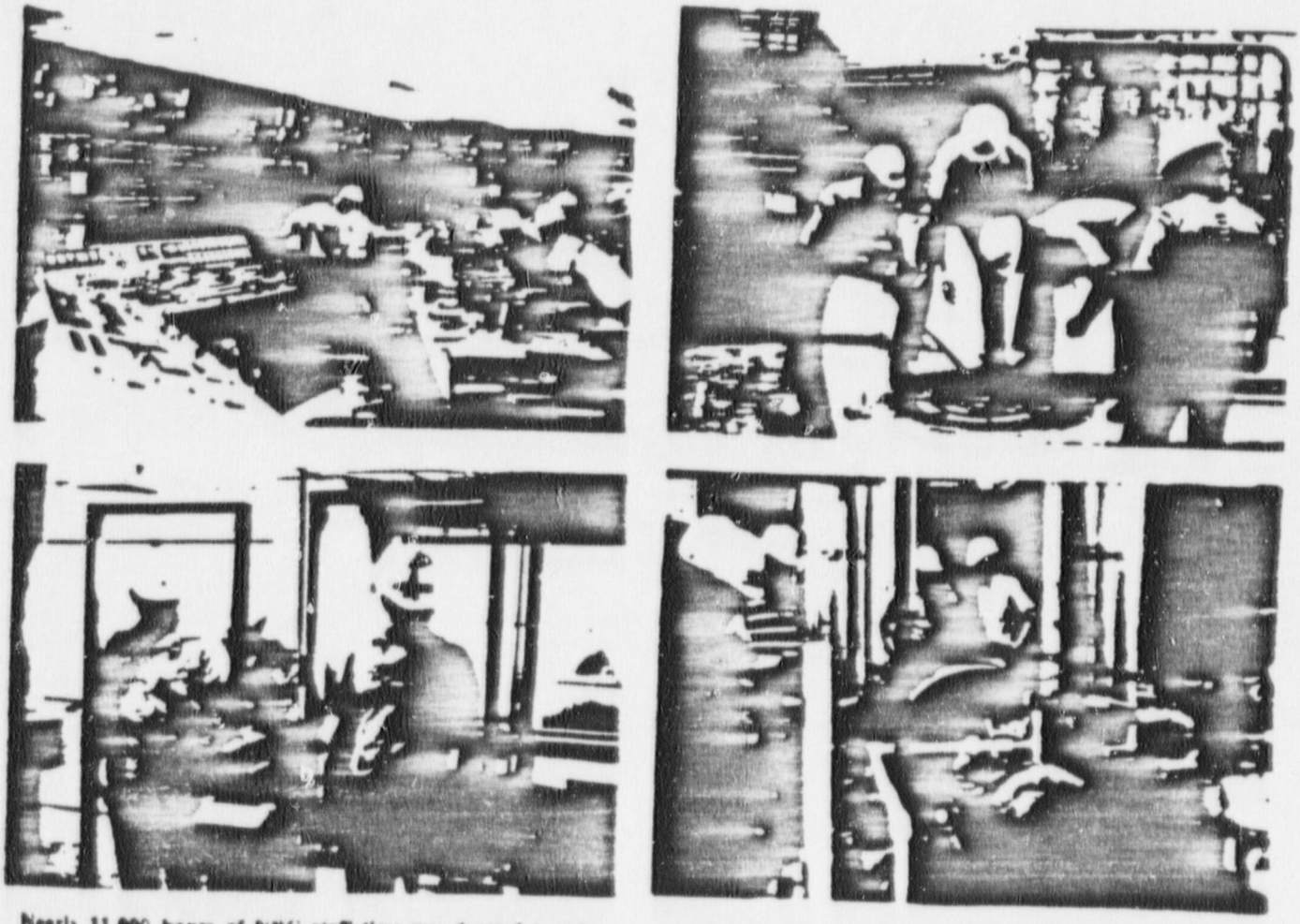
*Based on information on file as of 11/5/80

tection General Requirements at Fixed Sites") for protection against sabotage. In addition, licensees possessing less than formula quantities of SSNM have submitted security plans in accordance with the requirements of 10 CFR 73.67 ("Licensee Fixed Site and In-Transit Requirements for the Physical Protection of Special Nuclear Material of Moderate and Low Strategic Significance") for review and approval by the NRC. The new requirements include

- Storage and use of nuclear material only in controlled access areas.
- Monitoring of controlled access areas to detect unauthorized activities.
- Screening of individuals granted unescorted access.
- Response procedures to deal with safeguards contingencies.
- In-transit protection.

Many non-power reactor facilities that possess formula quantities of SSNM are either reducing holdings or extending operating schedules to ensure that the SSNM is irradiated to the self-protecting level. As a result, less than six non-power reactors are expected to have formula quantities of SSNM beyond the end of fiscal year 1980. These facilities will be required to meet the specific requirements of both 10 CFR 73.67 and 10 CFR 73.60 ("Additional Requirements for the Physical Protection of Special Nuclear Material at Non-Power Reactors").

Inspection and Enforcement at Reactors. NRC inspection and enforcement activities at reactors provide a means for judging the effectiveness of safeguards. In addition, NRC has developed a pilot program to aid in determining the effect that a noncompliance, or combination of noncompliances, would have on the effectiveness of the physical protection safeguards system. The NRC expended 10,878 hours in on-site safeguards inspections at power reactors, and 928 hours at non-power reactors and research facilities. These inspections revealed 326 items of noncompliance with safeguards requirements (see Table 3).



Nearly 11,000 hours of NRC staff time was devoted to safeguards inspections at nuclear power reactors in 1980. Shown here, clockwise from upper left, are NRC inspectors and plant personnel (1) analyzing a control room layout, (2) checking the access to an auxiliary feedwater pipe system tunnel, (3) examining the auxiliary feedwater pumps, and (4) examining and testing the radiation monitors at an exit.

U S NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of transcription: February 24, 1984

Report of Interview

Colleen Woodhead, Litigation Attorney, Office of the Executive Legal Director, upon interview concerning whether she had misrepresented facts or given false information to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:

As to Mr. Hirsch's (see Report of Interview, dated February 13, 1984) contention that Ms. Woodhead had offered in a December 1, 1980 argument to the ASLBP that only Section 73.67 (Title 10 CFR) applied because UCLA was a Category 2 facility, Ms. Woodhead said that she did not think that she knew at that time the meaning of the term "Category 2" facilities. She also believed that she had not made any such reference and provided a copy of the "NRC Staff Position on Unstipulated Contentions," dated December 1, 1980, in support of that position (attached).

As to the contention that Ms. Woodhead, at a pre-hearing conference held on February 4 and 5, 1981, had made the assertion that UCLA was not and never had been a Category 1 facility, Ms. Woodhead also believed that this was not the case. She provided a copy of the portion of the transcript (pages 285-491) of that conference which dealt with Committee to Bridge the Gap's (CBG) Contention XX.

In response to specific questions, she could not recall when she first became aware of the January 12 Miller letter to UCLA or the January 29 response. She did recall being told by Miller and Carlson prior to the conference that Section 73.67 applied because UCLA was meeting the 100 rem/hr exemption which was the position presented at the conference. She did not recall any discussion of the subject matter of the January 12 letter, i.e., UCLA was for a time a Category 1 facility, and as referenced above, did not think he knew of the existence of the letter at the time. (She noted that she had had a problem getting Miller to send copies of correspondence regarding the UCLA reactor to her.)

Based on her recollection and the above, she did not believe that she had ever made an assertion at the conference that the UCLA reactor had never been a Category 1 facility. She did recall putting forth the position that it was not a Category 1 facility at the time because Miller had told her of his verification by calculations that the facility was meeting the 100 rem/hr protection exemption.

Investigator's Note: A review of the documents provided by Ms. Woodhead was conducted separately and is also attached (Exhibit 1).

Investigation on February 22, 1984 at Bethesda, MD File # 84-9

By Ronald M. Smith, Investigator, OIA RMS Date dictated February 24, 1984

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Date of transcription February 27, 1984

Review of Documents

In the course of the interview with Ms. Woodhead, a copy of the "NRC Staff Position on Unstipulated Contentions" dated December 1, 1980, and a copy of pages 285-491 of the transcript of the pre-hearing conference held February 5, 1981, were provided.

Pages 9-14 of the December 80 document address the Committee to Bridge the Gap's (CBG) Contention XX. A review of those pages indicates no overt reference to the University of Southern California (UCLA) reactor being a Category 2 facility. However, in Footnote 4 (page 10) a general statement is made that because of a Commission Statement of Consideration given on November 1979, "non-power reactors are subject only to Section 73.67...." Review of the referenced Statement of Consideration (attached) indicates that the quoted statement may be an overstatement. While it is clear that the Statement addresses primarily the applicability and changes to Section 73.67, it does not do so to the express exclusion of 73.40. Section 73.67 was apparently intended as an "interim" solution while safeguards requirements adequacy were under review. It is further noted that the latest publication of 10 CFR still lists 73.40 as being promulgated under Section 161i, Atomic Energy Act (AEA) which means that willful violation of its provisions is a criminal offense under the provisions of Section 223a, AEA. In summary, the December 1, 1980, discussion appears to be based on the presumption that 73.67 is the only section at issue, particularly as to its meaning and application. There was no discussion as to the exact category of the UCLA reactor.

The transcript of the discussion of Contention XX during the February 5, 1981 prehearing conference begins at line 24, page 358 and goes to line 15, page 400. At page 377, beginning with line 16, Ms. Woodhead clearly states that "the only safeguard regulation that the Commission has promulgated for research reactors are contained in 73.67..." She further states, beginning at line 3, page 395, "In non-power reactors with a small amount of special nuclear material low to moderate, according to the category, they are not required to protect against sabotage or theft. They are simply required to detect unauthorized access to violators." There is no direct mention within these pages that the reactor never had been a Category 1 reactor. A scan of the remainder of the transcript also revealed no such reference.

Investigation on February 24, 1984 at Bethesda, Md. File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated February 24, 1984

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Attachment to Exhibit

Exhibit 27

US NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date transcribed: March 27, 1984

Report of Interview

Colleen Woodhead, Litigation Attorney, Office of the Executive legal Director, upon followup interview (see earlier interview dated February 24, 1984) concerning whether she had misrepresented facts or given false information to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at the University of California at Los Angeles (UCLA), provided the following information:*

When shown a copy of Inspection and Enforcement Manual Chapter 2545 dated January 27, 1984, and copies of the inspection reports for the University of Florida, Virginia Polytechnic Institute, and Iowa State University (see Review of Reports dated March 13, 1984), Ms. Woodhead said that she was not previously aware of any of them. She maintained that her affidavits and presentations to the ASLBP were true and accurate to her knowledge as well as being well supported by considerable documentation.

(She noted that because of knowledge of the material cited above, she would have to notify the ASLBP of the existence of that material.)

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*Ms. Woodhead was interviewed in the presence of Joseph R. Gray, Assistant Chief Hearing Counsel, Hearing Branch IV, Hearing Division, ELD, and also Ms. Woodhead's supervisor.

Investigation on March 16, 1984 at Bethesda, MD File # 84-9

by Ronald M. Smith, Investigator, OIA Date dictated March 20, 1984

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Date of transcription: March 27, 1984

Report of Interview

Joseph R. Gray, Assistant Chief Hearing Counsel, Hearing Branch IV, Hearing Division, Office of the Executive Legal Director (ELD), upon interview concerning his knowledge of whether Ms. Woodhead might have given false information to the Atomic Safety and Licensing Board Panel (ASLBP) considering the relicensing of the nonpower reactor at UCLA, provided the following information:

He, like Ms. Woodhead (see her Report of Interview dated March 20, 1984), was not aware of the existence of the Inspection and Enforcement (IE) Manual Chapter 2545 nor of the Inspection Reports which addressed protection against radiological sabotage at Virginia Polytechnic Institute and Iowa State University.

He did understand how the existence of these documents could raise questions about the accuracy of earlier statements and advised that they (ELD) would have to formally notify the Board (ASLBP) of the documents.

He further noted that they (ELD) just did not think of IE because the central issue from their perspective had always been whether Contention XX should even be entertained by the ASLBP (that is the existence or nonexistence of a radiological sabotage protection requirement) and not how good the protection was or was not. One simply did not reach the second issue if there was no protection requirement as maintained by NMSS Safeguards.

Investigation on March 16, 1984 at Bethesda, Md. File # 84-9

By Ronald M. Smith, Investigator, OIA Date dictated March 27, 1984

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U.S. NUCLEAR REGULATORY COMMISSION
Office of Inspector and Auditor

Date of Interview: May 9, 1984

Report of Interview

Mathew D. Schuster, Chief, Security Licensing and Emergency Preparedness Section, Region V, upon interview by telephone concerning a sworn affidavit given by him on March 6, 1984, provided the following information:

Investigator's Note: In the course of the investigative matter referred to the Office of Inspector and Auditor (OIA) by Administrative Judge John Frye, a copy of "NRC Staff Response to Allegations of Misrepresentation Made by the Atomic Safety and Licensing Board," dated March 9, 1984, was obtained. As an attachment to that document, Schuster provided the above mentioned affidavit (Attachment A). Within that statement, Schuster said in pertinent part "our post 1979 inspection reports did not reflect any inspection activity for sabotage protection" (emphasis added). However, a copy of IE Inspection Report 50-139/80-03 (IE-V-392) issued July 22, 1980, had also been obtained (Attachment B). That report, which addressed an inspection conducted June 11, 1980, at the University of Washington, included "Protection Against Radiological Sabotage" as one of the areas inspected. Paragraph 13 of the report was entitled "MC 81455B-Protection Against Radiological Sabotage" and included specific comment on the same issue. This interview was conducted for the purpose of addressing the apparent contradiction between Schuster's statement quoted above and the fact of the IE inspection report's existence.

Schuster said that his affidavit was based on memory and that he did not actually check to see if his statement was correct before making it. After he pulled a copy of the 1980 University of Washington inspection report, he clarified that he signed the report for the actual inspector, W. P. Mortensen, and also signed approving it. He believed that he just didn't remember the 1980 report when he made his affidavit in 1984.

Schuster went on to explain that the substance of his affidavit was still correct because at that time, when inspections were conducted, the time had to be accounted for administratively. If the inspection required use of any of the 81400 series modules, then comments on all the modules (including 81455) had to be accomplished in order "to complete the inspection program." Accordingly, the inspectors would write something down for each module (regardless of whether the basic requirement existed) in order to "complete the inspection program." He still asserted that everyone knew there really was no sabotage protection requirement and that the administrative program of accounting for time was the driving force behind such entries. The report then became more or less mechanical with the goal of addressing all modules. More recently, reports are done by exception in that inspection modules are mentioned only when, and if, an item of noncompliance within that particular module is found.

Attachments:
As Stated

Investigation on May 9, 1984 at Bethesda, Md File # 84-9

by Ronald M. Smith, Investigator, OIA RMS Date dictated May 9, 1984

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