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MAY 31 1991

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of	)	
	)	Docket Nos. 030-05980
SAFETY LIGHT CORPORATION	)	030-05981
UNITED STATES RADIUM	)	030-05982
CORPORATION	)	030-08335
USR INDUSTRIES, INC.	)	030-08444
USR CHEMICAL PRODUCTS, INC.	)	
USR METALS, INC.	)	
USR LIGHTING, INC.	)	
U.S. NATURAL RESOURCES, INC.	)	
LIME RIDGE INDUSTRIES, INC.	)	(ASLBP NO. 89-590-01-OM)
METREAL, INC.	)	AND 90-598-01-OM-2)
(Bloomsburg	)	
Site Decontamination)	)	

NRC STAFF'S RESPONSE TO LICENSING BOARD'S QUESTIONS EXPRESSED DURING CONFERENCE OF APRIL 19, 1991

INTRODUCTION

At a conference of counsel in the above-captioned matter held on April 19, 1991, the Atomic Safety and Licensing Board posed a number of questions for response by the NRC Staff. Pursuant to the Board's request, the Staff has prepared the following response to the Board's questions.

RESPONSE

Question 1

Establish a list of priorities for site characterization and decontamination activities which the Staff believes are necessary to protect the public health and safety, without regard to the amount of money that may become available from the licensees' insurance proceeds.

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Response

Without consideration of the actual amount of money that may be available, i.e., if sufficient money is available, the Staff would continue to require the licensees to complete characterization of the site and provide a decontamination plan as required by the Orders. That is, the Staff would require the licensees to finish a full site characterization first, and then submit a decontamination plan. This would allow the Staff to obtain a good understanding of the radiological characteristics of the site so that it may properly establish priority areas for remediation, before activities are commenced. No remediation activities would be commenced before the site characterization is completed, except as necessary to redress any imminent public health and safety hazards as may be disclosed or triggered by characterization efforts.

If only limited money is available, emphasis should shift away from full site characterization to partial remediation on a prioritized basis. The following list of prioritized activities is based on the limited, currently available knowledge of the Bloomsburg site; it focuses first on what is likely to be the most immediate threat to public health and safety and then on other decontamination activities of less immediate importance.[1]

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[1] Although the NRC may not have the jurisdiction regulate the radium (Ra-226) present on the Bloomsburg site (depending on its origin), the Staff's first priority would be to characterize and remove, if necessary, contaminated soil in the unrestricted northwest corner of the site. This area was identified by Oak Ridge

(continued...)

a. Characterize and remove contaminated material from the silos. These silos may be a major source of groundwater contamination on the site. Continued leaching from these silos may produce an increasingly larger area of contamination. These silos may also be contributing to contamination in the canal which is migrating off-site.

b. Characterize and, if necessary, remove contaminated material (including any hazardous constituents) in the canal, two lagoons, and the waste pit (the area marked "pit" west of the West Lagoon as shown on Figure 1 in the October 1990 Chem-Nuclear report, attached). It is still unclear if the source of the Sr-90 groundwater contamination on the Vance-Walton property is the silos or Sr-90 contaminated material in the canal. A waste pit has been identified in the western portion of the canal; it is possible that this pit is leaching contamination to the off-site area to the west, although the domestic well to the west of the site has not shown elevated levels of radioactivity.

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[1](...continued)
Associated Universities (ORAU) as being contaminated with Ra-226. Contaminated soil was found up to the property line; the survey did not extend past this line. The fact that Ra-226 contamination may extend off-site could pose an off-site impact and needs to be investigated. Coordination with other Federal and State agencies may be required to achieve resolution of this matter.

c. Characterize and decontaminate or remove contaminated site buildings. Many of the essentially unused buildings are contaminated with Ra-226, Cs-137, Sr-90 and H-3.

d. Conduct radiological surveys under the buildings and paved road at the site to determine if any contamination is beneath them, and determine whether corrective actions are required. Various reports have indicated that there is contamination beneath some of the buildings and the paved road. The concern is radiological risk upon repair or removal of buildings and facilities.

Question 2

Determine whether further characterization studies are required at this time, or whether such studies are not required and the parties' focus should turn instead to decontamination activities. If the staff determines that further characterization is required, what hypothesis will be tested? What will further characterization tell us to do differently when decontamination begins?

Response

The Staff's March 1989 Order required the Corporations to perform a complete geohydrological and radiological source characterization of the Bloomsburg site. Geohydrological characterization determines the gross physical characteristics and parameters of the site groundwater. This allows for an interpretation of the nature and spatial extent of groundwater contamination, whether there is an immediate threat to the public health and safety, and the potential impacts if contamination is left in its current location. This is the type of characterization that Chem-Nuclear has performed (in part) to date.

Radiological source characterization identifies more specific radiological characteristics such as volume, depth, chemical form, type of containment and concentration, and is normally performed prior to taking remedial action. The geohydrological characterization issues at Safety Light appear to have been mostly settled (i.e., the off-site groundwater impacts have been identified), but radiological source characterization remains to be done. Radiological source characterization is essential in helping to identify what type of remedial action must be performed, what type of waste products will be produced from remediation, the estimated costs of the remediation, and what precautions must be taken during remediation.

Given the limited funds that have been identified, the Staff believes that the focus of site work should now turn to a combination of radiological characterization and site remediation. What remains to be done, as indicated in the list of priorities in the response to Question 1 above, is characterization and remediation of known sources or areas of contamination that exist (a) off-site, (b) in unrestricted on-site areas and (c) in restricted on-site areas but which could impact off-site areas if not remediated. With the limited amount of funds available, care should be taken not to commence specific remediation activities that cannot be safely and completely concluded before funds run out. Remediation should also not be attempted without proper radiological source characterization unless monetary resources are available to cover the potential corrective action measures which could result.

Question 3

In view of the limited amount of money ($500,000) which has been committed by the licensees, state whether the Staff is able to reach a determination now as to how to proceed with this site.

Response

The Staff has now had an opportunity to consider the licensees' offer of $500,000. The lack of complete radiological characterization and the lack of licensee records regarding materials placed in the silos, waste pit, and lagoons make it difficult to estimate the costs associated with decontaminating each area; however, the limited data available suggest that the required site decontamination will be extensive. Accordingly, the Staff has determined that the amount of money committed by the licensees is insufficient. There is no reasonable assurance that any of the ranked activities (in the answer to Question 1) can be accomplished for $500,000, nor is there any assurance that additional funds will be available. The Staff is concerned that work once begun may be stopped (perhaps because of lack of money), leaving the work area in a more hazardous condition than before the work was started. Based on these considerations, the Staff remains committed to its determination that the original Orders are important for protection of public health and safety. The Staff is prepared to go forward in requiring implementation of these Orders, or to take such further actions as may be required to secure the site and provide for long-term protection of the public health and safety.

Question 4

Indicate when the Staff will know whether it does or does not require a multi-year or multi-seasonal study to determine groundwater flow characteristics.

Response

The Staff believes that at this time emphasis of the work at the Safety Light site should turn to a combination of radiological characterization and site remediation, and away from long-term studies of groundwater characteristics. Chem-Nuclear's report has reduced the immediacy of the original Order's need for geohydrological characterization. A good understanding of the periodic variations in groundwater flow would be useful to determine the long term impact of this site to off-site areas, but only if contamination is to be left on site. The extent and nature of any residual contamination left on site will only be known after site remediation has been completed, and only then can the Staff determine the usefulness of further groundwater flow studies.

In the interim, given that monitoring wells are already in place (although many of the wells are of poor quality), periodic groundwater measurement and sampling data can be collected relatively cheaply and concurrently with remediation work. Should a need for it arise, the data for a groundwater flow characterization will be in hand if complete site remediation is unsuccessful. Additionally, if groundwater sampling is performed concurrently with remediation activities, any temporary degradation of the site environment due to these activities will be detected.

Question 5

Indicate whether the Staff agrees with Chem-Nuclear's view that the tritium contamination in groundwater stems from the plant's stack releases. Does the staff agree that the primary transport mechanism for tritium entering groundwater is the plant stack or other airborne contamination?

Response

The Staff tends to agree with Chem-Nuclear's interpretation of the tritium contamination of the site, based on the limited data available to date. Chem-Nuclear's view is supported by the apparent correlation of the tritium concentration in soil to the prevailing wind direction and the fact that rainwater acts as a scavenger to carry tritium from the atmosphere to the soil.

Question 6

Provide the Staff's view of what the Chem-Nuclear report accomplishes in terms of our understanding of the site and site physics.

Response

The Staff believes the Chem-Nuclear report shows that the site's groundwater movement is predominantly toward the river and that "[t]here is no strong evidence to support lateral flow along the abandoned canal." There is some component of groundwater flow from on-site to the Vance-Walton property as evidenced by the Sr-90 contamination found there. This off-site migration appears to be minor (see answer to Question 7). Contaminated groundwater from the silo flows predominantly toward the river in the direction of wells 1, 2 and 3. There is widespread tritium contamination of soil and groundwater on and off-site, which appears to be from stack releases.

Question 7

Indicate whether (and to what extent) the Staff's experts accept and concur with the Chem-Nuclear report. Does it make any difference if groundwater flow in the abandoned canal is in the direction of the Vance-Walton property and then turns toward the river at the site boundary?

Response

The Staff, based on what is currently known about the site, generally accepts and concurs with the Chem-Nuclear report. The report, submitted October 11, 1990, details Chem-Nuclear's soil coring, monitoring well installation, groundwater and rainwater sampling which was performed in June and July of 1990. Chem-Nuclear took soil corings and installed and sampled wells only in off-site or up-gradient areas, and took rainwater samples in up and down wind directions. Samples were analyzed for gross alpha/beta, gamma isotopic, H-3, Sr-90 and field parameters.

The Staff did question Chem-Nuclear's configuration of the Sr-90 groundwater iso-concentration lines in the southeastern part of the site as shown on figure 16 of the report, based on the limited data available. Subsequently the Department of Energy's Radiological and Environmental Sciences Laboratory (RESL) analyzed NRC's samples from all on site wells (including split samples from the nine new wells installed by Chem-Nuclear) and the RESL data generally support Chem-Nuclear's results, but indicate that the location of some of Chem-Nuclear's iso-concentration lines were erroneously placed. Additional data points are necessary to relocate the contour lines correctly.

It would not make any difference to off-site impact if the groundwater flow in the canal was toward the Vance-Walton property and then turned toward the river at the property line, because the contamination would be contained on-site. However, there is apparently some groundwater flow parallel to the river even past the property boundary, because there are above-background concentrations of Sr-90 in wells A and F on the Vance-Walton property. Chem-Nuclear's analysis of groundwater from wells A and F show Sr-90 levels below the Environmental Protection Agency's (EPA's) interim drinking water standard of 8 pCi/l. NRC's split analysis of well A shows a Sr-90 concentration of 13 pCi/l. What remains unclear is whether the groundwater contamination in the canal originates from the silos or from contaminated material disposed in the canal.

Question 8

Indicate whether the Staff now believes, based on the Chem-Nuclear report, that the strontium (gross beta activity) in groundwater may correctly be perceived to be moving toward the river, from well-1 to well-2 to well-3. If so, does the Staff suspect any anomalies in these data?

Response

The strontium-90 and gross beta activity from the silos is generally moving toward the river as indicated by the data from wells 1, 2 and 3. There is also some strontium-90 in the eastern portion of the abandoned canal as indicated by the data from well 21; and there appears to be some strontium-90 contamination moving off-site to the east of the property (in the direction of Vance-Walton) as evidenced by the strontium-90 concentration in well A.

The Staff does not suspect any specific anomalies in these data, only data gaps which do not allow a full understanding of the source concentrations and locations and transport mechanisms of the strontium-90 contamination that is found in the eastern boundary area of the site and beyond.

In addition, it must be recalled that the Sr-90 concentration readings were taken at different times, and are likely to have been affected to some extent by groundwater and rainwater variations extant on those occasions. Nonetheless, the Staff believes that the data generally provide a representative indication of radiological contamination and groundwater flow characteristics at the site.

Question 9

Indicate whether the Staff believes the fence and posting which have been provided by the licensees are sufficient to restrict public access to the site.

Response

Yes. The licensees have erected a fence eight feet high around the outdoor restricted area at the site. Signs on the fence enclosing the outdoor restricted area at the Bloomsburg site warn of the presence of radioactive material and prohibit trespassing. For the conditions which exist at the Bloomsburg site, the purposes of the posting and fencing are to inform individuals of the presence of radioactive materials, prevent inadvertent access to the site, and deter the casual intruder. They are not expected to provide absolute security against intrusion.

The location of the fencing parallel to the river is a matter of judgment. The fence must be close enough to the water to encompass "areas with elevated

direct exposure rates and/or contamination levels," but sufficiently removed from the water so that the fence is not damaged or destroyed by high water and/or debris carried down river during storms or floods. The Staff believes that the fence is located appropriately, with these considerations in mind. In sum, the Staff believes that the premises are adequately posted and that access control is adequate as long as the licensees are on site.

Question 10

Review the March 1989 Order on a line-by-line basis, to determine which (if any) of the health and safety concerns reflected in and underlying that Order remain of concern and are relevant at this time.

Response

The Staff has reviewed the March 1989 Order, as requested by the Board. The Staff's health and safety determinations were set forth in Sections V, VI, and VII of the Order, and are analyzed below.

Section V

- "In addition to the foregoing, the soil and groundwater at the Bloomsburg facility have become radioactively contaminated as a result of past operations at the facility."

It may be more accurate to say that contamination resulted from both past operations, and current operations involving tritium. (See answer to Question 12). In any event, this concern remains valid and is relevant at this time.

- "The principal radionuclides are tritium, strontium-90, and radium-226."

This concern remains valid and is relevant at this time. In addition, Cesium-137 has been identified in the soil and groundwater.

- "The levels exceed NRC limits that would permit unrestricted access to the site."

This statement, which applies to strontium-90, was true in 1989 and remains true today.

- "Tritium has also been detected in groundwater off-site in the well of a nearby house."

This statement was true in 1989 and remains true at this time. However, within the last few years, Safety Light or its principals bought the adjacent property (known as the Vance-Walton property), and the well on that property is not used now to supply drinking water or water for other human-related uses. Nonetheless, this property and others in the area continue to exhibit tritium concentrations significantly above background, and this issue therefore continues to be relevant at this time.

- "Although the tritium in that well is not yet above drinking water limits set by the U.S. Environmental Protection Agency, further off-site contamination is likely to occur over time due to the movement of groundwater and soil erosion."

As indicated above, tritium in well water may result from environmental releases from ongoing operations or from a combination of those environmental releases and movement of tritium in groundwater and through soil erosion. The 1990 Chem-Nuclear study provided new information indicating that groundwater appears to be moving toward the river, but the study does not rule out the

possibility that there may be some movement laterally (in an easterly or westerly direction) through the canal.

The soil on the Bloomsburg site is contaminated and may be carried off-site through erosion. In addition, the site abuts the Susquehanna River and is subject to periodic flooding. Thus, the possibility still exists that radioactive materials may be transported off-site whether through the movement of groundwater, soil erosion, flooding, or other similar mechanisms. Therefore, this issue is still a concern.

- "Pits on the site contain unknown types and quantities of radioactive material that pose a potential threat to the health and safety of employees and any others on the site."

This statement continues to be true and is a concern at this time. Sketches of the Bloomsburg site indicate the presence of silos (two "structures" underground in which radioactive waste was disposed in the 1950s) and a "pit" to the west of the west lagoon. There are no existing records that provide information (e.g., radionuclide, chemical form, activity, presence of other hazardous substances in addition to the radioactivity, type of packaging, dates on which materials were put into the silos or pit) about the radioactive materials that have been placed in the silos and pit areas. The 1990 Chem-Nuclear partial characterization study did not provide information on these matters. In the absence of licensee records and site characterization (especially, radiological characterization) of these areas, the Staff remains concerned that one or more containers which are located in the silos or pit and which may hold substantial

quantities of the more hazardous radioactive materials could fail, releasing sizable quantities of hazardous radioactive material that may be transported off-site via ground water, soil erosion, flooding, or other similar mechanism. Thus, removal of materials in the silos is a high priority. (See answer to Question 1)

- "Access to the site by the public is not restricted and members of the public have been and may be present."

When the March 1989 Order was issued, this statement was true. As further detailed in the answer to Question 9, Safety Light has addressed this portion of the Order, by constructing a fence and posting the property. This issue is no longer of concern at this time, while the site continues to be occupied by the licensees.

- "Therefore, access needs to be restricted and decontamination of the facility and real estate is required and must begin immediately."

Note that, in the context of this sentence, the term "decontamination" includes planning, characterization, cleanup and disposal. The Staff has been concerned for some time, and remains concerned, about the facts that: radioactive materials and contamination are located in many buildings and in outdoor areas of the Bloomsburg site; extensive efforts and large sums of money will be needed to clean-up the site; and the licensees appear to have no coordinated, timely plan for completing decontamination, clean-up and disposal. The Staff has not required that the licensees complete clean-up within a very brief time. Rather, the Staff has required the licensees to develop and implement a plan, which might extend over a number of years, to systematically

improve the status of the site, until final clean-up has been achieved. No reason has been shown to exist which would lessen Staff concern that systematic decontamination be commenced at this time.

Section VI

- ". . . The presence of considerable known contamination, coupled with the uncertain extent of that and other, as yet unknown, contamination requires that action be taken immediately to survey, stabilize, and clean up the site."

  This statement continues to be true and is relevant at this time.

- "In order to ensure that the Corporations provide adequate resources to evaluate, plan, and implement decontamination efforts with proper radiological safety procedures, I have determined that specific decontamination requirements and milestones are necessary and that decontamination needs to begin expeditiously so as to minimize any threat to the public health and safety."

  This statement continues to be true and is relevant at this time. The Corporations have repeatedly claimed to be in weak financial condition and have not yet accomplished any meaningful site decontamination. The Staff believes that the Corporations should accomplish as much of the cleanup as is possible, without further delay.

- ". . . . [T]he NRC lacks reasonable assurance that site characterization and decontamination of the Bloomsburg facility will be initiated and completed in an orderly and timely fashion to ensure that the health and safety of the public, including current employees and adjoining landowners will be protected."

  This statement continues to be true and is relevant at this time.

- ". . . . [t]he public health, safety and interest require that the actions specified by section VII of this Order commence immediately."

This statement continues to be true and is relevant at this time. As indicated previously, some characterization has been conducted and the site has been fenced and posted. However, substantial levels of contamination are present, an organized effort leading toward eventual cleanup has yet to be initiated, and the potential exists for significant adverse impact on the public health and safety. Thus, it is important that decontamination commence without further delay.

Section VII

- "A. Within 90 days from the date of this Order, Safety Light Corporation shall post the premises as required by 10 CFR Part 20 and shall control access to all contaminated areas at the Bloomsburg facility by a fence or other suitable means so as to create a restricted area, as defined in 10 CFR Part 20."

The licensees have complied with this requirement, and no further access controls are required at this time.

- "B. Within 45 days from the date of this Order, all Corporations shall jointly submit, to the Regional Administrator, NRC, Region I, for his review and approval, a joint plan to characterize the radioactivity at the Bloomsburg site. The plan shall describe in detail . . ."

The licensees requested and were granted an extension of time to comply with this requirement. They submitted a joint characterization plan (JCP) in a timely fashion on June 2, 1989, but it was substantially lacking in content and detail. After an enforcement conference on July 6, 1989, and a subsequent meeting with NRC on July 13, 1989, they submitted a revised JCP dated August 9, 1989. On September 11, 1989, the NRC Staff approved the August

9th JCP, subject to the correction of certain specified deficiencies. These deficiencies have never been addressed by the licensees.

- "C. Within 180 days from the date the Regional Administrator approves the site characterization plan required by section VII.B. of this Order, all Corporations shall jointly submit, to the Regional Administrator, NRC, Region I, for his review and approval, a single report that contains a complete radiological characterization of the site, with a description of the location and level of all sources of radiation and contamination, including non-radiological hazards. . . ."

The Corporations have not complied with this requirement. In mid-1990 the Corporations had a contractor (Chem-Nuclear) conduct a partial site characterization study, and the results of the study were submitted to NRC in October 1990. Despite the submission of this partial study, this part of the Order has not been completely satisfied, in that it requires performance of a full site characterization. This continues to be true and is relevant at this time, in order to afford an accurate and full understanding of the site characteristics, especially with regard to radiological sources.

- "D. Within 30 days from the date of [sic] the Regional Administrator approves the site characterization report required by section VII.C. of this Order, all Corporations shall jointly submit to the Regional Administrator, NRC, Region I, for his review and approval, a single decontamination plan with a timetable for specific decontamination activities (milestones) and transfer of contaminated waste. The plan shall include the rationale for the priorities established and specify the amount of funds that each of the Corporations is to provide for implementation of the plan. . . ."

The Corporations have not submitted such a plan. The requirement that the plan be submitted remains necessary at this time, so as to permit the Staff to consider and approve proposed decontamination activities.

- "E. Following the Regional Administrator's approval of the decontamination plan required by section VII.D. of this Order, a corporate officer, not lower than the President, from each of the Corporations shall submit, within 15 days of the end of each calendar quarter, a [decontamination progress] status report . . . ."

The Corporations have not submitted such reports. The requirement that the quarterly reports be submitted remains necessary at this time, in order to permit the Staff to monitor decontamination activities as they progress at the site.

- "F. No Corporation named herein shall either abandon or transfer the Bloomsburg facility, until the NRC has confirmed that a successful decontamination of the Bloomsburg facility has been completed."

This continues to be an important requirement, for obvious reasons.

Question 11

Indicate what has and has not been done in response to the Staff's Order of March 1989, and indicate whether (and why) the Staff believes the licensees' failure to do more until now has not affected the public health and safety.

Response

The licensees' efforts to date in the areas of fencing, posting, and partial site characterization have alleviated the Staff's concern over the potential for imminent health and safety impacts resulting from site contamination. However, the lack of licensee records regarding materials placed in the silos, waste pit, and lagoons, and the lack of complete, especially radiological, characterization, prevent the staff from being able to quantify the potential for risk. Therefore, while the Staff does not believe that any adverse impact to the public has

resulted to date, there is no basis to believe that the public will not be at risk in the future.

Question 12

What has been done to mitigate tritium releases? What more needs to be done? How has the public health and safety suffered by not doing the latter?

Response

Action Taken To Mitigate Tritium Releases

Safety Light Corporation described its efforts to mitigate tritium releases in its January 11, 1991, response to the NRC Staff's December 11, 1990, Demand for Information. These efforts were discussed during an NRC inspection on January 22-23, 1991, and the following additional information was provided to the NRC inspector:

1. Safety Light states that it is making a greater effort to match production of tritium tubes to the demands of its customers. This reduces the manufacturing of tubes which only go into inventory.
2. Safety Light has reduced by one the number of storage "pyros" used in the manufacturing process. This increases the recovery efficiency of one of its rotary tube-filling units.
3. In early 1989, Safety Light stopped manufacturing "China markers," a small light source which exhibited a high percentage of leakers.

4. Safety Light substantially reduced the amount of waste tritium stored on site by shipments to Canada and Hanford. The storage of waste tritium was a source of release to the environment.

The efforts described above may have contributed to a mitigation of tritium releases. However, tritium releases overall have been found to correlate with manufacturing production levels, which levels have increased in recent years. Accordingly, notwithstanding Safety light's efforts to reduce its tritium releases, overall releases have not been reduced, since the releases vary with the quantity of tritium handled in manufacturing.

What more needs to be done? Has public health and safety suffered?

Since the current releases are in compliance with 10 CFR 20.106 and are not, at this time, causing a health and safety problem offsite, additional action with respect to reducing tritium releases is not considered necessary. Since 1987, Safety Light has released an average of 6,000 curies of tritium per year to the environment up its main stack. Based on measurements in the stack, 97 percent of this activity is in the form of tritiated hydrogen gas. Tritium gas has a unrestricted release limit of 40,000 picocuries per liter of air. Safety Light's release of about 6,000 curies per year is expected to result in an average concentration of less that 20 picocuries per liter of air, or about 10 percent of the 10 CFR Part 20 limit for unrestricted areas at the site boundary, even if the more restrictive limit for tritiated water vapor (in contrast to tritium gas) of 200 pico-curies per liter of air is used, using accepted meteorological calculations.

Safety Light's measurements at or near the site boundary and on adjacent property are consistent with these expectations. Safety Light's techniques for measuring tritium in effluent air are routinely reviewed during inspections and were reviewed by OKAU. These reviews have found Safety Light's tritium releases to be acceptable.

The measured concentrations of tritium in offsite water are significantly less than the 3,000,000 picocuries per liter limit for water in unrestricted areas in 10 CFR Part 20 and, except for the now-unused Vance-Walton well, are also less than the EPA's interim limit for drinking water of 20,000 picocuries per liter.

The concentration of tritium in offsite water not used for human-related purposes (e.g., tritiated water in soil removed from new wells A-C, F and H; samples of standing water) ranges from 10,000 to 100,000 picocuries per liter. These concentrations are not in excess of applicable limits.

While tritium concentrations appear to be within applicable regulatory limits and public health and safety appear to be adequately protected at the present, there exists potential for continued long term buildup of tritium contamination in the plant environs. This type of buildup was not contemplated in the present 10 CFR Part 20. The Staff intends to explore with the licensees further actions which may be feasible to reduce continued process contribution to tritium contamination in accordance with the ALARA ("as low as reasonably

achievable") principle or as might be required for long term protection of the public health and safety.

Since the measurements of tritium, as discussed above, are all within applicable NRC regulations, the Staff believes that further mitigative efforts to reduce tritium releases are unnecessary, and that the public health and safety has not been adversely affected by these levels of tritium releases.

CONCLUSION

The above response is submitted pursuant to the Licensing Board's request of April 19, 1991. In light of the Staff's position stated herein, the Staff is discussing with counsel for Safety Light and USR Industries, Inc. the need and most appropriate procedures for going forward with a hearing in this proceeding. A report concerning these matters will be submitted to the Licensing Board within the next ten days.

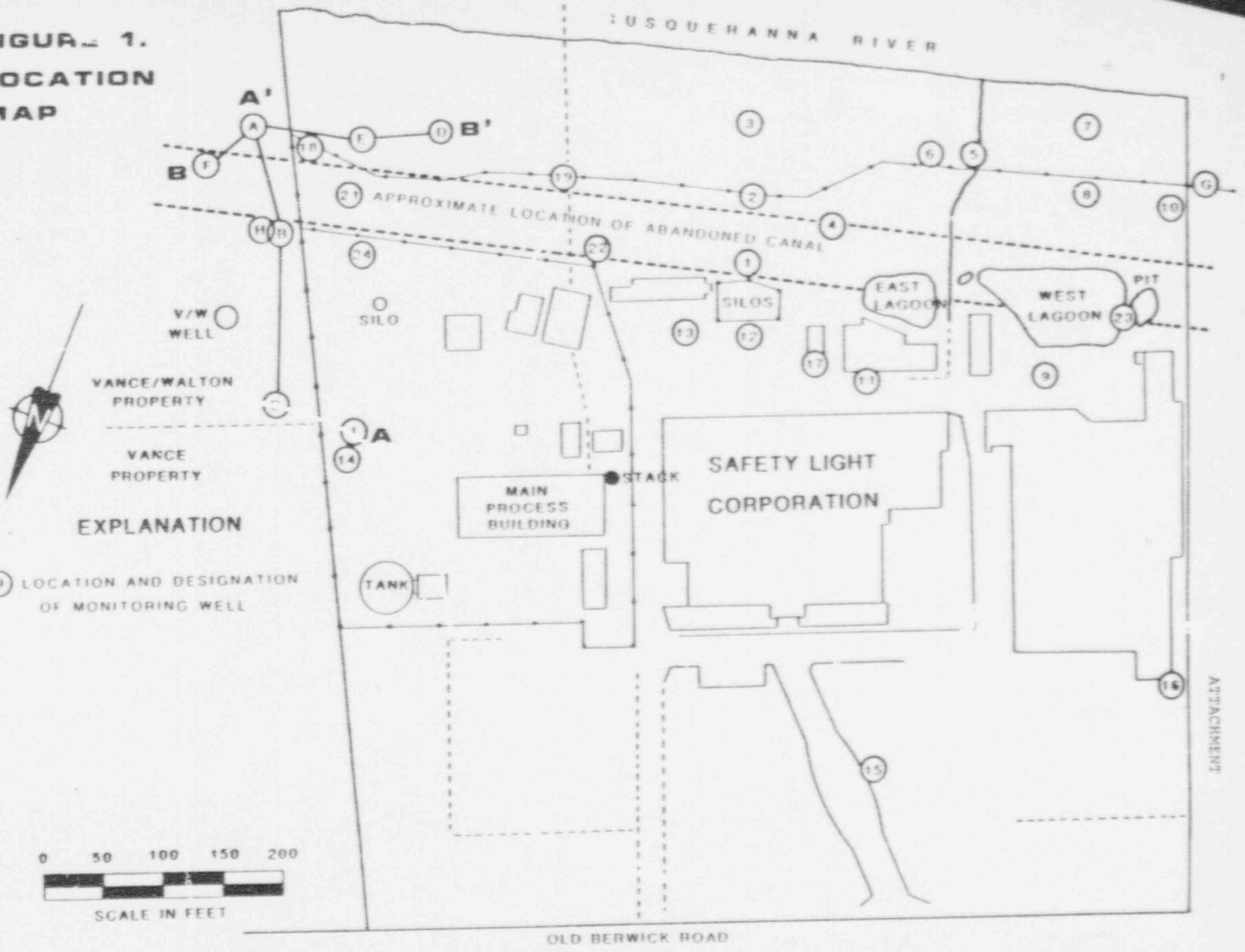
Respectfully submitted,

Robert M. Weisman

Robert M. Weisman
Counsel for the NRC Staff

Dated at Rockville, Maryland
this 31st day of May, 1991.

FIGURE 1.
LOCATION MAP



ATTACHMENT

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METREAL, INC.	)	AND 90-598-01-OM-2)
(Bloomsburg Site Decontamination)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO LICENSING BOARD'S QUESTIONS EXPRESSED DURING CONFERENCE OF APRIL 19, 1991" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system or as indicated by a double asterisk by hand delivery or as indicated by triple asterick by express mail service, this 31st day of May, 1991:

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