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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

1980 DEC 3 PM 1 02

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In the Matter of)
PENNSYLVANIA POWER AND LIGHT CO.)
AND)
ALLEGHENY ELECTRIC COOPERATIVE, INC.)
(Susquehanna Steam Electric Station,)
Units 1 and 2))

Docket Nos. 50-387
50-388

NRC STAFF ANSWER IN SUPPORT OF APPLICANTS'
MOTION FOR SUMMARY DISPOSITION OF CONTENTION 2 (CHLORINE)

I. INTRODUCTION

On November 6, 1980, Pennsylvania Power and Light Company and Allegheny Electric Cooperative Incorporated (Applicants) filed "Applicants' Motion for Summary Disposition of Contention 2 (Chlorine)" (Motion). In that motion, Applicants move the Board for summary disposition in its favor on that portion of Contention 2 which alleges that the health effects of the chlorine to be discharged into the Susquehanna River have not been adequately assessed. Applicants assert that this portion of Contention 2 presents no genuine issue of material fact and that thus Applicants are entitled to a decision in its favor on this portion as a matter of law.

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The NRC Staff supports Applicants' Motion. The Staff concludes that Applicants' Motion and its supporting documentation demonstrate the absence of any genuine issue of material fact with respect to those health effects identified during discovery by the sponsor of this contention (Citizens Against Nuclear Danger (CAND)) as the effects which CAND believes have not been adequately assessed. The Staff further concludes that the broader question of whether the health effects of the chlorine to be discharged have been adequately assessed also presents no genuine issue of material fact. The Board should, therefore, dismiss this portion of Contention 2 as a matter of law.

Section II of this pleading will discuss generally the law applicable to motions for summary disposition. Section III will show that the chlorine portion of Contention 2 raises no genuine issue of material fact. The Staff supports Applicants' statement of facts as to which there is no genuine issue. It has, however, attached a Supplement to Applicants' Statement of Material Facts to support its conclusion that even those health effects of chlorine discharge not identified by CAND have been adequately assessed.

II. GENERAL POINTS OF LAW

The Commission's Rules of Practice provide for summary disposition of certain issues on the pleadings where the filings in the proceeding show that there is no genuine issue as to any material fact and that the movant is entitled

to a decision as a matter of law. 10 C.F.R. § 2.749. The party seeking summary judgment has "the burden of showing the absence of a genuine issue as to any material fact."^{1/} To meet this burden, the movant must eliminate any real doubt as to the existence of any genuine issue of material fact.^{2/} In discharging this burden, the summary disposition rule provides that all material facts set out in the statement mandatorily accompanying summary disposition motions will be deemed to be admitted unless controverted by the opposing party. 10 C.F.R. § 2.749(a). Although the record and the affidavits both supporting and opposing a motion for summary disposition must be viewed in the light most favorable to an opposing party,^{3/} that party must present facts in the proper form in order to defeat a summary disposition motion.^{4/} An opposing party's facts must be material and substantial, not fanciful or merely suspicious.^{5/}

^{1/} Adickes v. Kress & Co., 389 U.S. 144, 157 (1970); Cleveland Electric Illuminating Company (Perry, Units 1 and 2), ALAB-433, 6 NRC 741, 752-54 (1977). Because the Commission's summary disposition rule is analogous to Rule 56 of the Federal Rules of Civil Procedure, Federal court decisions interpreting Rule 56 may be relied on for an understanding of the operation of the summary disposition rule. Alabama Power Company (Joseph M. Farley, Units 1 and 2), ALAB-182, 7 AEC 210, 217 (1974).

^{2/} Poller v. Columbia Broadcasting Co., 368 U.S. 464, 468 (1962); Sartor v. Arkansas Natural Gas Corp., 321 U.S. 620, 627 (1944).

^{3/} See Public Service Co. of New Hampshire (Seabrook Station, Units 1 and 2), LBP-74-36, 7 AEC 877 (1974).

^{4/} Gulf States Utilities Company (River Bend Station, Units 1 and 2) LBP-75-10, 1 NRC 246, 248 (1975).

^{5/} Id.

Summary disposition is desirable because it permits the prompt resolution of an issue on its merits without a formal hearing when no factual dispute exists.^{6/} The Staff submits that such a procedure is particularly appropriate here as there is no factual basis for the portion of Contention 2 which refers to chlorine.

III. STAFF ARGUMENT IN SUPPORT OF APPLICANTS' MOTION

The portion of Contention 2 at issue here is that portion which alleges that the health effects of the chlorine to be discharged into the Susquehanna River have not been adequately assessed. This contention provides general notice of CAND's concern. While admissible, such notice is not sufficiently specific to enable parties to gather evidence for a hearing^{7/} or to permit a decision on its merits. For example, the contention does not specify which health effects CAND believes have been inadequately assessed, and why. Thus, the Rules of Practice provide for the refinement of issues through the use of discovery.^{8/} Discovery enables the parties to ascertain the basis for an opposing party's case and thus to identify those matters which are actually

^{6/} Gelhorn and Robinson, Summary Judgment in Administrative Adjudication, 84 HARV. L. REV. 612 (1971).

^{7/} Pennsylvania Power & Light Co. (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 11 NRC ____, slip op. at 30 (September 23, 1980).

^{8/} 10 C.F.R. § 2.740.

controverted. Discovery responses therefore specify the particular concerns of a party and, in so specifying, limit the breadth of a general contention.^{9/}

In this proceeding, both Applicants^{10/} and the Staff^{11/} filed discovery requests with CAND to better understand CAND's concerns. The Staff asked CAND to specify the health effects which it believed would result from discharge of chlorine into the Susquehanna River. In response, CAND indicated that the health effects it believed had not been adequately assessed were those which would flow from Applicants use of chlorine in greater quantities than specified in the application. CAND stated Applicants would be compelled to use more chlorine than anticipated because of (1) "the necessity of continual pumping of billions of gallons of mine acid drainage into the Susquehanna River from numerous existing abandoned mine workings" due to "planned government endorsed large-scale mining of Anthracite coal commencing in the near future" and (2) "the Butler Mine Water Tunnel waste chemical spills into the Susquehanna River."^{12/} CAND asserts that Applicants will have to use "chlorine to demineralize and clarify the polluted river water for plant use."^{13/} Thus, through discovery, CAND has specified those matters it actually controverts. CAND's concerns, as revealed by discovery,

^{9/} 10 C.F.R. § 2.749(b).

^{10/} Applicants' First Set of Interrogatories to Intervenor Citizens Against Nuclear Dangers, dated May 25, 1979, p. 3-4.

^{11/} NRC Staff's First Round Discovery Requests of the Citizens Against Nuclear Dangers (CAND), dated May 21, 1979, p. 3.

^{12/} Citizens Against Nuclear Dangers Motions and Replies to Interrogatories Nos. 2, 16, & 17, dated April 29, 1980, p. 4-5.

^{13/} Id.

do not relate to the health effects of chlorine discharge in general but to the health effects of chlorine discharges in excess of those evaluated in the Draft Environmental Statement because CAND believes that Applicants will be compelled to use greater quantities of chlorine to prepare the potentially polluted river water for use in the facility.

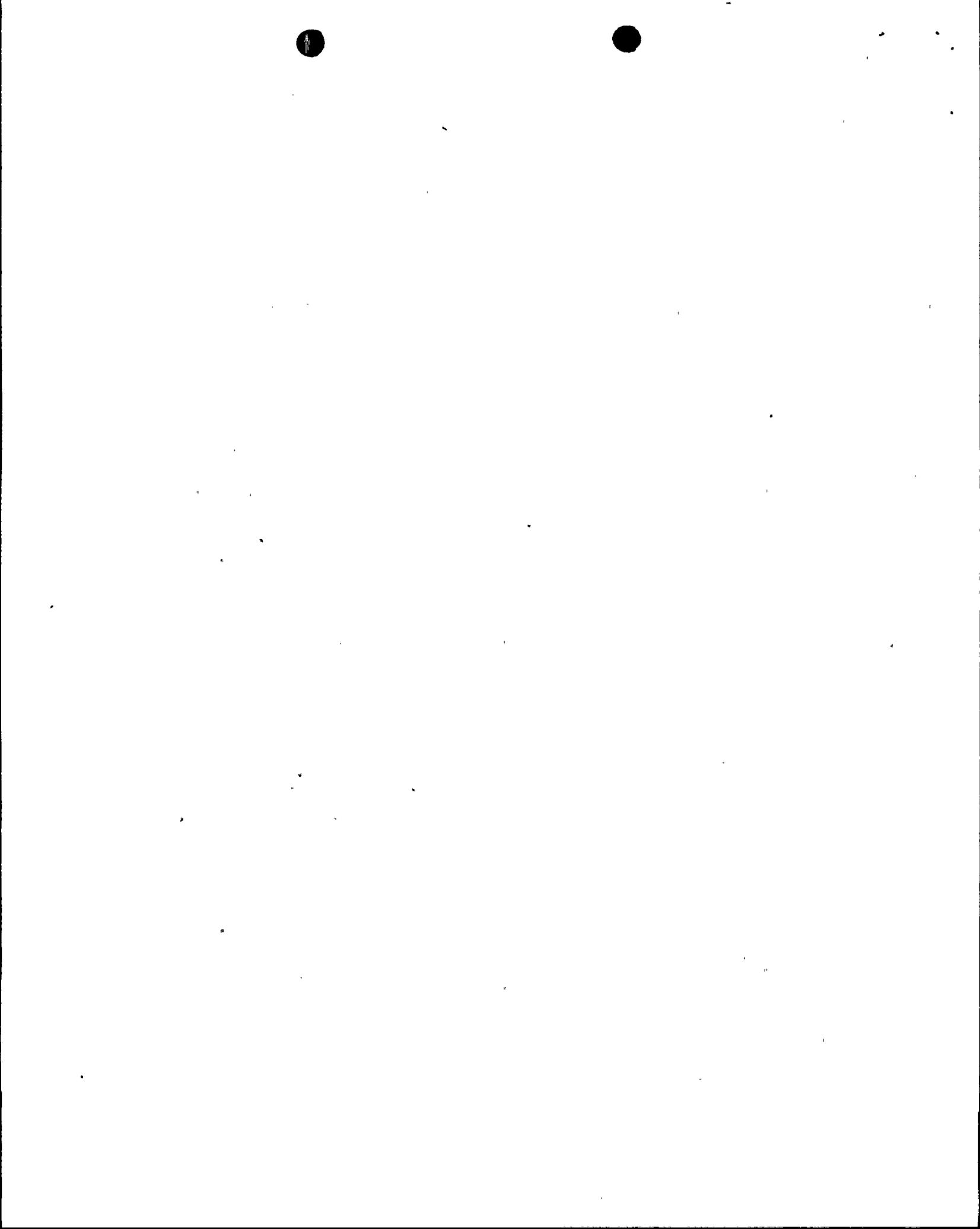
Applicants have attached to their Motion "Applicants' Statement Of Material Facts As To Which There Is No Genuine Issue To Be Heard (Chlorine)" and "Applicants' Brief In Support of Motion For Summary Disposition Of Contention 2 (Chlorine)." The Staff has independently evaluated the issue raised by these documents and concludes that the chlorine portion of Contention 2, as refined by discovery, lacks a factual basis. Based on its evaluation, the Staff further concludes that there is no factual basis for the chlorine portion of Contention 2 even if that portion is not limited by CAND's discovery response to those specific health effects identified by CAND.

The major use of chlorine in the Susquehanna facility will be to control biofouling of the heat exchange surfaces in the main circulating water system. The build up of organisms on heat transferring surfaces can adversely affect the condenser heat transfer rate and thus the plant efficiency and can adversely affect the performance of cooling towers. In extreme cases, massive build up of organic materials in the cooling tower can lead to failure of cooling tower fill. There are other comparatively minor uses of chlorine at the facility, such as disinfecting the potable water supply and the sewage effluent. (Affidavit of John C. Lehr at 2).

Acid mine drainage will tend to decrease the biological productivity of the receiving water through direct toxic action on the biota and through indirect actions, such as depletion of dissolved oxygen to the extent that the organisms could no longer survive. Therefore, the biotic content of the plant's influent water would tend to decrease under the conditions described in CAND's response to NRC's discovery requests. Thus, if the conditions alleged by CAND came into existence, these conditions would tend to decrease the need to chlorinate. In other words, although it is not likely that the need to chlorinate would be eliminated under the postulated conditions, the overall amount of chlorine to be applied may be decreased. (Lehr at 2).

CAND further alleged in its discovery response that the presence of toxic chemicals in the Susquehanna River would necessitate an increase in the level of chlorination. Without additional specific information on the particular toxic chemicals alleged to be present, the Staff cannot make a judgment as to the need to alter the chlorination level proposed by Applicants. The Staff does note, however, that chlorination is not generally used as a mechanism for the removal of toxic chemicals from water. (Lehr at 2).

Accordingly, there appears to be no relationship between the use of chlorine to control biofouling of heat exchange surfaces in this facility and the possible future presence of acid mine drainage and toxic chemicals in the Susquehanna River. As chlorine is not used to demineralize and clarify



river water for plant use as alleged by CAND in its discovery response, Applicants will not be forced to use more chlorine for this purpose. There is therefore no genuine issue of material fact and the Board should rule in favor of Applicants as a matter of law.

With regard to the broader question of whether the general health effects of the chlorine to be discharged have been adequately assessed, the Staff concludes that there has been an adequate and comprehensive assessment in the Draft Environmental Statement. The Staff sets forth those general health effects below.

As stated earlier, the Susquehanna facility will use chlorine primarily for biofouling control. This chlorine will react very rapidly with substances in the cooling water. Active chlorine chemical species will be reduced to below detectable limits by a dechlorination system using sulfur dioxide. Other byproducts will be chloride compounds and chlorine-containing compounds such as trihalomethanes. While there is no perceived public health threat from chlorides at the levels likely to be discharged, trihalomethanes have been listed as toxic under the Clean Water Act.^{14/} The most significant liquid pathway to the offsite environment for these trihalomethanes is the cooling tower blowdown. The principal health effect of trihalomethanes involves their suspected carcinogenicity. (Lehr at 3-5).

^{14/} 33 U.S.C. § 1314(a); Natural Resources Defense Council v. Train, 8 E.R.C. 2120 (D.D.C. 1976).

Because a quantitative estimate of trihalomethane concentrations in the plant's discharge has not been made by Applicants, the specific water chemistry that will exist under operating conditions with concentrated river water in the treated plant system cannot be predicted accurately. Active chlorine behavior is dependent on this chemistry. Thus, the conditions in the blowdown are largely unknown at this time. In a study of chlorinated closed cycle cooling systems, however, the chloroform concentration was 6.2 $\mu\text{g/l}$ two hours after chlorine addition. (Lehr at 6).

The trihalomethanes and the halomethanes in general have been evaluated by EPA in order to establish criteria for the protection of human health. EPA has stated that a maximum level of 6 $\mu\text{g/l}$ in raw and finished waters could be considered acceptable for these compounds, exclusive of contribution to total exposure from air and food. (Lehr at 4). Additionally, EPA proposed a water quality criterion of 2 $\mu\text{g/l}$ for this group of halomethanes, stating that this level will provide an adequate margin of safety in the absence of sufficient data for quantitative risk assessment and will take into account the fact that exposure to halomethanes also occurs through foods and via inhalation. (Lehr at 4).

While water quality criteria must state the maximum concentrations consistent with the protection of human health and aquatic life,^{15/} EPA also

^{15/} Notice of Availability of Water Quality Criteria Documents, 44 Fed. Reg. 15926 (March 15, 1979).



regulates the presence of trihalomethanes in community drinking water systems under the Safe Drinking Water Act.^{16/} That Act requires EPA to establish national interim primary drinking water regulations which protect health to the extent feasible, using technology, treatment techniques, and other means determined to be generally available.^{17/} The term "feasible" is defined by the Act to take cost into consideration.^{18/} In the Interim Primary Drinking Water Regulations, EPA has established that total trihalomethanes in community drinking water systems serving 75,000 or more individuals should not exceed 100 $\mu\text{g}/\text{l}$. This value is well above the value established for protection of public health in the water quality criteria and the reported value found in cooling tower water. (Lehr at 6).

Finally, it should be noted that water treatment plants downstream are capable of reducing the amount of trihalomehtanes that occur in finished drinking water. While the exact process changes or chemical treatments to be employed would vary according to the specific characteristics of the influent water, plant design, and desired level of trihalomethanes in the effluent water, a recent study has shown that 59 to 90 percent reductions in levels of trihalomethanes in finished water supplies can be achieved by a variety of readily available means. Furthermore, the discharge flow of the plant is a small fraction of the river flow under normal conditions.

^{16/} 42 U.S.C. § 300f et seq.

^{17/} Id. at § 300g-1(a)(2).

^{18/} Id. at § 300g-1(b)(3).

The flow of the river will further reduce the concentrations of trihalomethanes from the plant arriving downstream for treatment. (Lehr at 8).

In sum, the use of chlorine at the plant for biofouling control would probably result in the release of trihalomethanes, principally chloroform, in amounts that are less than those permitted under the Safe Drinking Water Act and comparable to the maximum permissible level referred to in the development of the water quality criterion. (Lehr at 4). The Staff further notes that while the amount of chlorine and its byproducts which may be discharged by this facility into the Susquehanna River is a matter solely within EPA's jurisdiction,^{19/} a number of means are readily available to downstream water treatment plants which desire to reduce the trihalomethane levels in finished drinking water. Thus, based on our independent review of scientific knowledge regarding the health effects of chlorine discharge in water, the Staff concludes that these health effects have been adequately assessed and that the use of chlorine for biofouling control will not result in a significant impact on public health.

V. CONCLUSION

Based on the foregoing, the NRC Staff believes that it is clearly demonstrated that there is no genuine issue as to any material fact regarding the portion of Contention 2 which relates to chlorine. Accordingly, the NRC Staff

^{19/} Pennsylvania Power & Light Co. (Susquehanna Steam Electric Station, Units 1 and 2), LBP-79-6, 9 NRC 291, 300 (1979).

believes that summary disposition in favor of the Applicants should be granted as a matter of law in accordance with 10 C.F.R. § 2.749.

Respectfully submitted,

Jessica H. Lavery

Jessica H. Lavery
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 2nd day of December, 1980

