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 RECIP. NAME RECIPIENT AFFILIATION
 MURLEY, T.E. Document Control Branch (Document Control Desk),

SUBJECT: Updates findings in 910924 ltr re evaluation of tritium migration in aquifer of facilities & surrounding communities. Absorption pond influence beyond dune swale highly unlikely.

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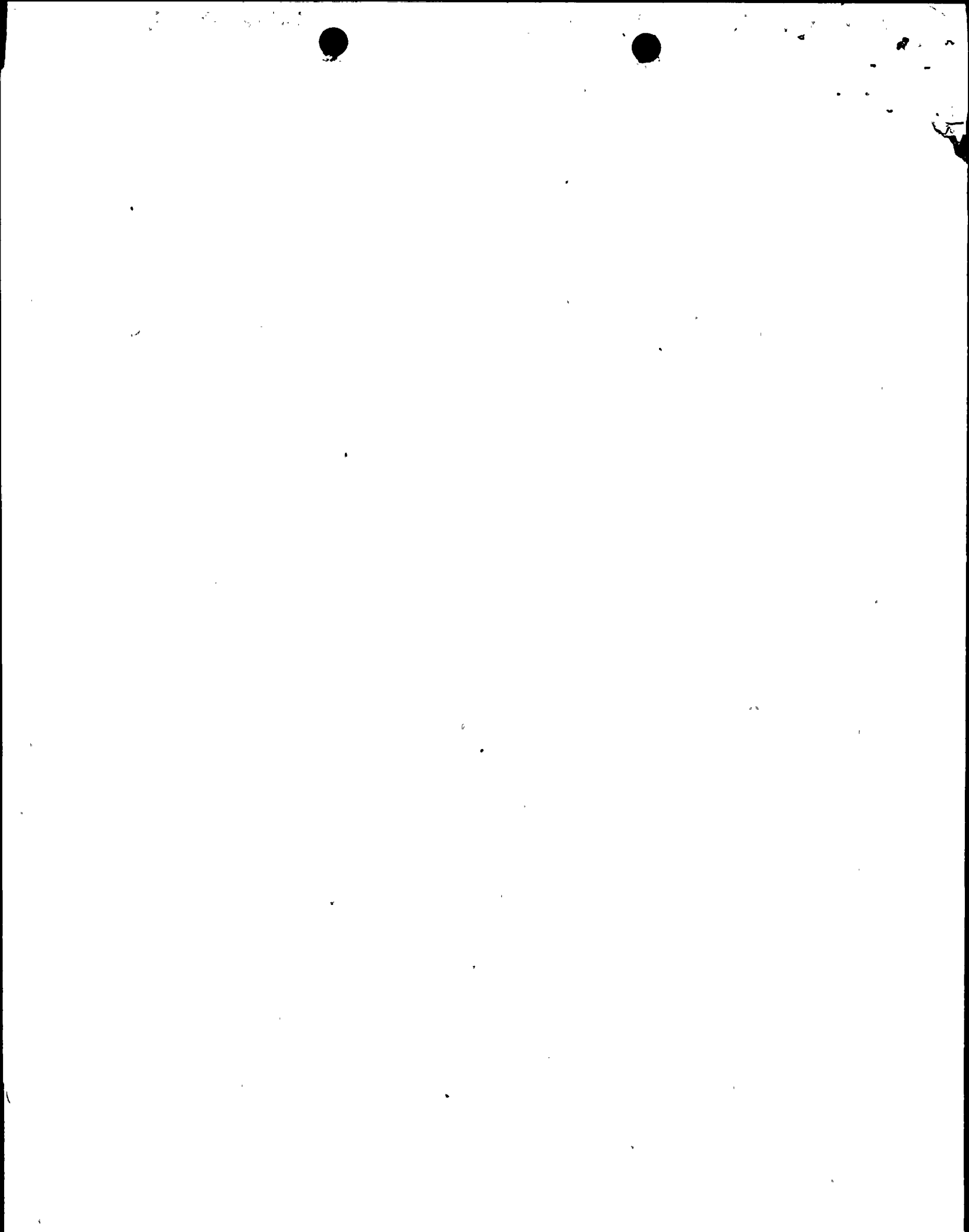
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AEP:NRC 1164A

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
EVALUATION OF TRITIUM MIGRATION IN THE AQUIFER OF
THE COOK NUCLEAR PLANT AND SURROUNDING COMMUNITIES

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

ATTN: A. B. Davis

December 23, 1991

Dear Mr. Davis,

This letter is being sent to you to update the findings of our letter dated, September 24, 1991, entitled "Evaluation of Tritium Migration in the Aquifer of the Donald C. Cook Nuclear Plant and Surrounding Communities". In our proactive approach to this matter, we continue to monitor groundwater flow from the Turbine Room Sump Absorption Pond. Data collected subsequent to our September 24 submittal through our continued monitoring program have led to a change in conclusions reached in the hydrology report previously provided to you. Specifically, these data indicate Absorption Pond influence at the southern portion of the plant site boundary. As a result, the statement made in our September 24 submittal that the "...affected aquifer is confined within the site boundaries..." is not supported by our most recent data.

Although these recent data reflect possible Absorption Pond influence beyond the site boundary in the southern direction, there is a dune swale approximately 400 feet from the boundary which would divert groundwater flow towards Lake Michigan. In addition, no wells exist between the site boundary and the dune swale. The nearest residential wells, which are currently inactive, (all Livingston Hills residents are part of the Lake Township Municipal Water System) are approximately 1100 feet from the plant site boundary and south of the dune swale. According to our hydro-geologist currently studying this matter, the dune swale would deter

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further migration of groundwater in the southern direction and would naturally drain the groundwater towards Lake Michigan. Therefore, Absorption Pond influence beyond the dune swale is highly unlikely. The impact on Lake Michigan with respect to dose to members of the public is accounted for in our semi-annual effluent release report.

In addition, our calculations based on NUREG/CR-3332, Radiological Assessment, show a reduction in tritium concentration by a factor of approximately 130 at a distance of 2250 feet from the Absorption Pond. This represents the distance from the Absorption Pond to the off-site sample well just south of the dune swale following a hypothetical groundwater flow path around the dune swale. At current Absorption Pond concentrations (1000-6000pCi/l) the groundwater tritium concentration at the sample well south of the dune swale, according to our calculations, would not be detectable.

In our September 24, 1991 letter, we committed to the following controls:

1. to sample and analyze quarterly groundwater samples from additional wells along the southern and northern site boundaries for tritium and,
2. to implement an action level of 10,000 pCi/l, tritium, for the Turbine Room Sump. Exceeding this concentration will initiate an investigation into the cause of the increase and the effect it may have on the aquifer.

We believe that although there is evidence of Absorption Pond influence at the site boundary, the dune swale and the above mentioned controls ensure that any off-site impact is minimized and there is no threat to the safety and welfare of the public.

This document has been prepared following Corporate procedures that incorporate a reasonable set of controls to ensure its accuracy and completeness prior to signature by the undersigned.

Sincerely,



E. E. Fitzpatrick
Vice President

cmv

cc: D. H. Williams, Jr.
A. A. Blind - Bridgman
J. R. Padgett
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NFEM Section Chief
NRC Resident Inspector - Bridgman

10/10/10