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SUBJECT: Special rept: results of annual land use census for 1988.

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Donald C. Cook Nuclear Plant Units 1 and 2  
Docket Nos. 50-315 and 50-316  
License Nos. DPR-58 and DPR-74  
TECHNICAL SPECIFICATION (T/S) SPECIAL REPORT - LAND USE  
CENSUS (T/S 3.12.2)

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

Attn: A. B. Davis

October 31, 1988

Dear Mr. Davis:

The purpose of this letter is to submit a Special Report pursuant to our T/S Section 3.12.2, Action a., which states:

"With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification 4.11.2.3, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location(s)."

This Special Report is being submitted, as required, to provide the results of our annual land use census conducted in 1988 in fulfillment of the T/S 3.12.2 surveillance requirement. The 1988 census identified the need to change the distances to the nearest residences in each of the Cook Nuclear Plant land sectors used in calculating off-site doses. These changes, in some cases, result in calculated doses that, while still well within regulatory requirements, are higher than those previously calculated in accordance with T/S 4.11.2.3.

#### Background

In conjunction with the performance of our annual land use census, drawings, photographs and other documentation associated with an aerial survey of the Cook Nuclear Plant previously performed by the AEP Civil Engineering Laboratory were reviewed. This review was performed by Civil Engineering Laboratory personnel to identify the nearest structures in each land sector. Cook Nuclear

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Plant personnel then verified which of these structures were residences in order to establish the distance to the nearest residential unit in each land sector. The Cook Nuclear Plant sectors are shown in the attached Figure 1.

#### Land Use Census Results

The 1988 land use census resulted in new distances being established for the distance to the nearest residential unit in each land sector. A comparison between the new distances and those used for off-site dose assessment as reported in our Semi-Annual Radioactive Effluent Release Report is provided in the attached Table 1. As can be seen from the table, the 1988 census shows residential units in sectors B, C and D closer than the distances used in the semi-annual report off-site dose assessment. Residential units in the remaining sectors (E through K) are farther than assumed in the semi-annual report. Upon review of the differences in the distances to the nearest residential units between the 1988 census and the semi-annual report, we have concluded that the differences are due to the fact that the survey method used originally to establish distances for the semi-annual report was not capable of the level of precision available from the aerial survey used in the 1988 land use census.

The percent change in dose/dose commitment from the dispersion pathways, direct exposure due to ground deposition and consumption of leafy vegetables resulting from the new distances to residential units is provided in the attached Table 2 for each land sector. The maximum corrected calculated thyroid doses were 0.011 mRem for inhalation dose, and 0.058 mRem from consumption of leafy vegetables. The maximum corrected skin dose was 0.0064 from direct exposure via the plume and ground deposition pathways. In addition, based on the 1988 census distances an analysis was performed to determine the change in whole body and organ doses for all pathways for each critical population (adult, teen, child, infant) in each land sector for the first half of 1988. In no instance was the calculated critical organ dose significant relative to allowable dose limits. The changes in the distances to the nearest residential unit resulting from the 1988 land use census therefore do not represent a significant hazard to the public, and in fact calculated doses to the off-site population continue to be significantly less than the limits specified by T/S Sections 3.11.2.2 and 3.11.2.3.

In view of the differences identified in Tables 1 and 2 and discussed above, we have retained a local surveying company to independently establish the distances to the nearest residential unit in each land sector. As part of this effort, the drawings

Mr. A. B. Davis

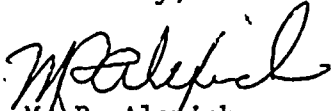
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and other documentation supplied by the AEP Civil Engineering Laboratory will also be reviewed and verified. If the results of this independent review effort differ substantially from those provided in this special report, a supplemental report will be issued.

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

Sincerely,



M. P. Alexich  
Vice President

ldp

Attachments

cc: D. H. Williams, Jr.  
W. G. Smith, Jr. - Bridgman  
R. C. Callen  
G. Charnoff  
G. Bruchmann  
A. B. Davis - Region III  
NRC Resident Inspector - Bridgman

ATTACHMENT TO AEP:NRC:1079

FIGURE 1, TABLE 1 AND TABLE 2

Table 1

1988 Land Use Census Results

Sector	Distance to Nearest Residence (Meters)	
	1988 Land Use Census	Semi-Annual Radio- active Effluent Release Report
B	664	814
C	950	1052
D	1820	1852
E	1721	1705
F	1654	1628
G	1144	914
H	1511	1093
J	1049	863
K	948	770

Table 2

Dose/Dose Commitment Changes

Sector	Percent Increase or (Decrease) in Calculated Dose - 1988 Census vs. Semi-Annual Radioactive Effluent Release Report	
	Direct Plume/Inhalation	Direct Ground/ Vegetation Ingestion
B	32.3	42.5
C	15.4	19.4
D	2.5	3.1
E	(1.3)	(1.6)
F	(2.2)	(2.7)
G	(27.4)	(32.3)
H	(37.5)	(42.6)
J	(24.4)	(28.8)
K	(25.8)	(30.5)

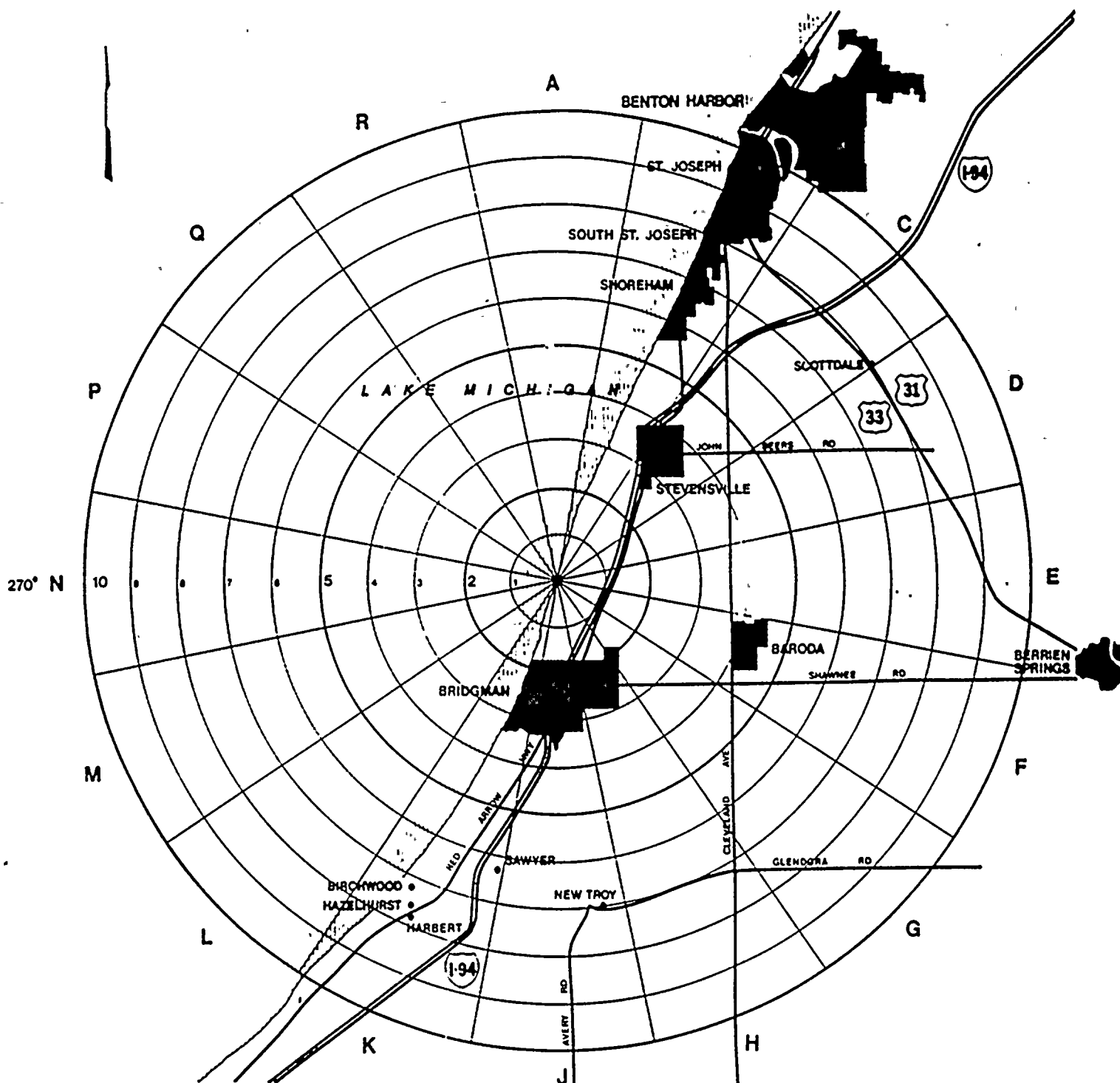


FIGURE 1: COOK NUCLEAR PLANT 22.5° SECTORS