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 RECIP. NAME: RECIPIENT AFFILIATION
 DENTON, H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Responds to DL Wigginton 850326 ltr. Relief requested from
 Section XI of ASME Boiler & Pressure Vessel Code for certain
 valve & testing requirements. Rev 1 to valve summary sheets
 for inservice testing program encl.

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NOTES: *see Drawings*
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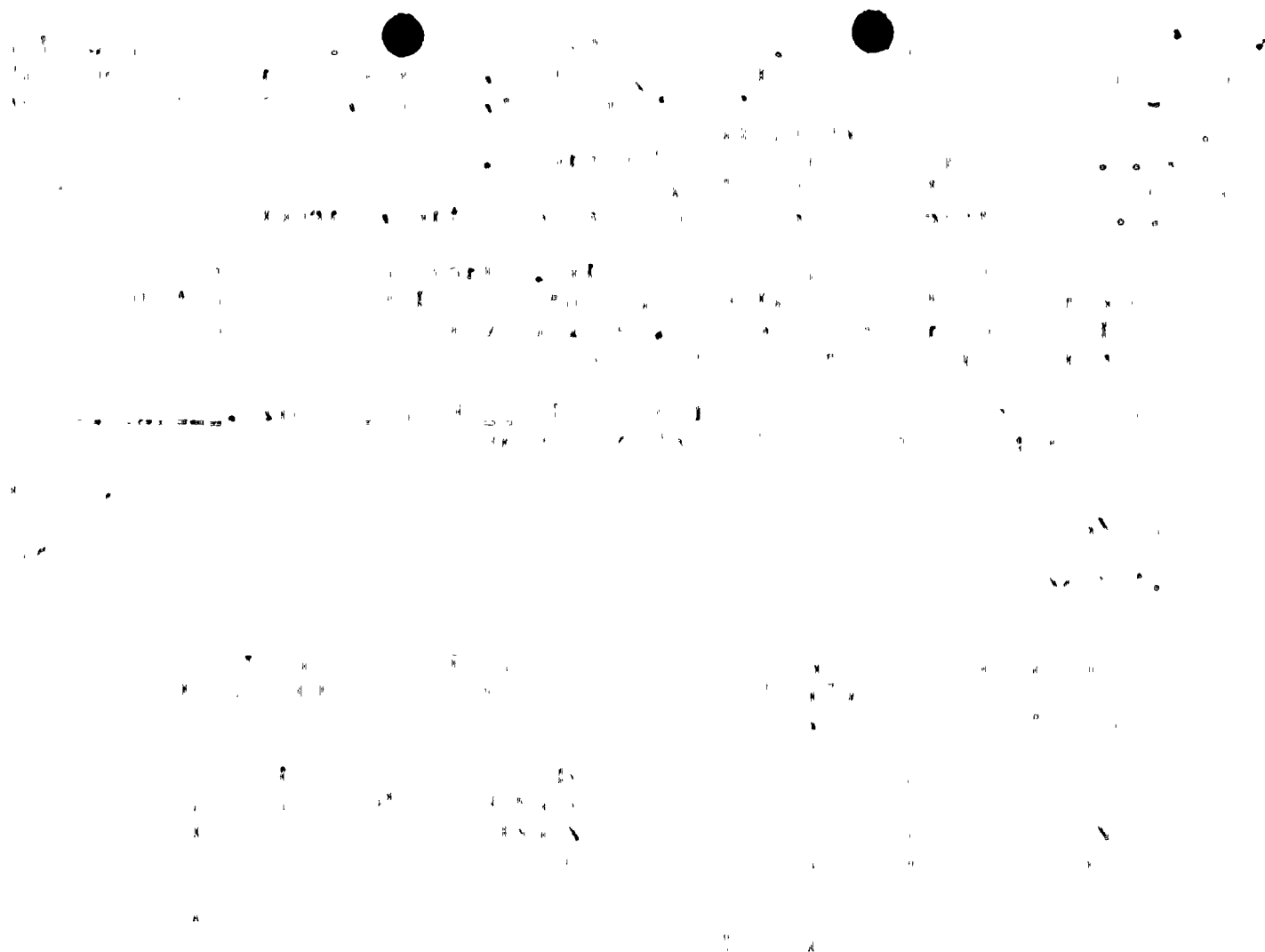
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INDIANA & MICHIGAN ELECTRIC COMPANY

P.O. BOX 16631
COLUMBUS, OHIO 43216

May 10, 1985

AEP:NRC:0730G

Donald C. Cook Nuclear Plant Unit Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
INSERVICE TESTING PROGRAM-CODE RELIEFS

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

- Reference: 1) Letter from Mr. David L. Wigginton, NRC, dated
March 26, 1985
- 2) Our Letter No. AEP:NRC:0730F dated May 10, 1985

Dear Mr. Denton:

This letter and its Attachments are in response to the above referenced letter from Mr. D. L. Wigginton of your staff and provide the revised pages for the Inservice Testing Program (IST) for the Donald C. Cook Nuclear Plant. This submittal is made pursuant to 10 CFR Section 50.55a(g)(6)(i) and requests code relief from section XI of the ASME Boiler and Pressure Vessel Code for certain valve and pump testing requirements. Attachment 1 to this letter is a complete revision to the IST Pump Program for the D. C. Cook Nuclear Plant. The code relief requests discussed at the March 6 and 7, 1985 meeting between our staff and the NRC are detailed in Tables B, D and E. Attachments 2 and 3 contain the request for code relief for the valve testing programs for Units 1 and 2 respectively. For your convenience these attachments are submitted as revised pages to the IST Valve Program which was submitted in our earlier letter AEP:NRC:0730C dated October 2, 1984. For your information those code reliefs which were discussed at the March meeting are marked as "C-1" in the margin. In addition, the revised pages include valve program changes that were agreed upon between the NRC and our staff at that meeting. These revisions are marked as "M-1" in the margin. Other changes identified by us during the preparation of this submittal, which are either minor or editorial in nature, are marked as "E-1".

Attachments 1, 2 and 3 replace the corresponding pages of the IST program submitted in our earlier letter no. AEP:NRC:0730C dated October 2, 1984.

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The map shows the northern Adriatic coastline from Trieste in the northwest to the Gulf of Genoa in the southeast. Sampling stations are indicated by numbered dots: 1 (near Trieste), 2 (off the coast of Trieste), 3 (off the coast of Udine), 4 (off the coast of Gorizia), 5 (off the coast of Trieste), 6 (off the coast of Trieste), 7 (off the coast of Trieste), 8 (off the coast of Trieste), 9 (off the coast of Trieste), 10 (off the coast of Trieste), 11 (off the coast of Trieste), 12 (off the coast of Trieste), 13 (off the coast of Trieste), 14 (off the coast of Trieste), and 15 (off the coast of Trieste). A scale bar at the bottom indicates 100 km.

...and the fact that the *Journal* is a journal of the American Psychological Association, the largest and most influential organization in the field of psychology, adds to the journal's prestige and makes it a must-read for all psychologists.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters.

2. The second part outlines the specific procedures for recording transactions. It details the steps involved in identifying, documenting, and verifying each transaction, ensuring that all relevant information is captured and stored securely.

3. The third part addresses the challenges associated with record-keeping, such as data loss, corruption, and unauthorized access. It provides strategies to mitigate these risks, including regular backups, secure storage solutions, and strict access controls.


4. The fourth part discusses the role of technology in enhancing record-keeping processes. It highlights the benefits of using digital tools and software to streamline data collection, storage, and retrieval, while also noting the need for robust security measures.

5. The fifth part concludes by emphasizing the ongoing nature of record-keeping and the importance of continuous monitoring and improvement. It encourages organizations to stay updated on best practices and emerging technologies to ensure their records remain accurate and reliable.

Figure 1. A schematic diagram of the experimental setup. The subject is seated in a chair and views the target through a video screen. The target is a light source that is visible through a video screen. The target is a light source that is visible through a video screen. The target is a light source that is visible through a video screen.

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

Very truly yours,


M. P. Alexich
Vice President 10/25

cm

Attachments

cc: John E. Dolan (w/o attachment)
W. G. Smith, Jr. - Bridgman (w/attachment)
R. C. Callen (w/o attachment)
G. Bruchmann (w/o attachment)
G. Charnoff (w/o attachment)
NRC Resident Inspector - Bridgman (w/attachment)
R. Lyon - EG&G

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1942年7月，日本帝国主义为了进一步侵略中国，在华北地区推行“归屯并户”政策，将大量中国平民强制迁移到指定的“归屯并户”点。这一政策旨在集中管理人口，便于实施经济掠夺和军事控制。

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$$f = \frac{1}{\pi} \int_0^\pi f(\theta) d\theta$$

$\frac{d}{dt} \left(\int_{\Omega} u^2 dx + \int_{\Gamma} u^2 dS \right) = -2 \int_{\Omega} \nabla u \cdot \nabla v dx - 2 \int_{\Gamma} \kappa u^2 dS$

ATTACHMENT NO. 1
TO
AEP:NRC:0730G

DONALD C. COOK NUCLEAR PLANT - UNITS NO. 1 AND 2

ASME B & PV CODE SECTION XI

PUMP INSERVICE TEST PROGRAM

- A. The pump test program shall be conducted in accordance with Subsection IWP of Section XI of the 1974 Edition of the ASME Boiler and Pressure Vessel Code through Summer 1975 Addenda, except for specific relief requested in accordance with 10 CFR 50.55a(g)(5)(iii) which is identified in Tables B, C, D and E.
- B. The period for which the pump inservice test program is applicable is the period beginning December 23, 1978 for Unit 1 and the period beginning July 1, 1978 for Unit 2.
- C. The pump test program was developed employing the classification guidelines contained in Regulatory Guide 1.26, Revision 2 for Quality Groups B and C, and the definition of the reactor coolant system boundary contained in 10 CFR 50.2 (v) for Group A. (Quality Groups A, B, and C are the same as ASME Class 1, 2, and 3, respectively). Using these guidelines and IWP-1100, the pump list attached as Table A was developed. Table A identifies the following:
 - i. The pump number and service it performs along with the drawing identification number on which it is found.
 - ii. The applicable test parameters:
 - 1. Speed
 - 2. Inlet Pressure
 - 3. Differential Pressure
Determined as the difference between measured discharge and suction pressures
 - 4. Flow Rate
 - 5. Vibration Amplitude
 - 6. Bearing Temperature
 - iii. The test frequency required.

DONALD C. COOK NUCLEAR PLANT - UNITS NO. 1 AND 2
PUMP INSERVICE TEST PROGRAM

TABLE A
PROGRAM SUMMARY

| PUMP
SERVICE
DWG. NO. | PUMP
NUMBER | TEST PARAMETERS | | | | | | TEST
FREQUENCY
(1) |
|-----------------------------|----------------|-----------------|-------------------------------------|-------------------------------|-------------------|---------------------------------|--|--------------------------|
| | | SPEED
N | INLET
PRESSURE
P _i | DIFFERENTIAL
PRESSURE
P | FLOW
RATE
Q | VIBRATION
AMPLITUDE
V (4) | BEARING
TEMPERATURE
T _b | |
| AUXILIARY | PP-3W | NO | YES | YES | YES* | YES | YES | MONTHLY |
| FEEDWATER | PP-3E | NO | YES | YES | YES* | YES | YES | MONTHLY |
| (5106A) | PP-4 | YES | YES | YES | YES* | YES | YES | MONTHLY |
| ESSENTIAL | PP-7W | NO | YES (3) | YES | YES | YES | YES (5) | MONTHLY |
| SERVICE | PP-7E | NO | YES (3) | YES | YES | YES | YES (5) | MONTHLY |
| WATER (5113) | | | | | | | | |
| CENTRIFUGAL | PP-50W | NO | YES | YES | NO** | YES | YES | MONTHLY |
| CHARGING | PP-50E | NO | YES | YES | NO** | YES | YES | MONTHLY |
| (5129) | | | | | | | | |
| BORIC ACID | PP-46-1 | NO | YES (3) | YES | NO* | YES | YES | MONTHLY |
| TRANSFER | PP-46-2 | NO | YES (3) | YES | NO* | YES | YES | MONTHLY |
| (5131) | PP-46-3 | NO | YES (3) | YES | NO* | YES | YES | MONTHLY |
| | PP-46-4 | NO | YES (3) | YES | NO* | YES | YES | MONTHLY |
| COMPONENT | PP-10W | NO | YES | YES | YES | YES | YES | MONTHLY |
| COOLING | PP-10E | NO | YES | YES | YES | YES | YES | MONTHLY |
| WATER (5135A) | | | | | | | | |
| SAFETY | PP-26N | NO | YES | YES | NO** | YES | YES | MONTHLY |
| INJECTION | PP-26S | NO | YES | YES | NO** | YES | YES | MONTHLY |
| (5142) | | | | | | | | |
| RESIDUAL | PP-35W | NO | YES | YES | YES* | YES | YES | MONTHLY |
| HEAT REMOVAL | PP-35E | NO | YES | YES | YES* | YES | YES | MONTHLY |
| (5143) | | | | | | | | |
| CONTAINMENT | PP-9W | NO | YES | YES | YES* | YES | YES | MONTHLY |
| SPRAY (5144) | PP-9E | NO | YES | YES | YES* | YES | YES | MONTHLY |
| DIESEL FUEL OIL | QT-106 AB1 | NO | YES | YES | YES (6) | YES | NO (5) | QUARTERLY (2) |
| TRANSFER PUMPS | QT-106 AB2 | NO | YES | YES | YES (6) | YES | NO (5) | QUARTERLY (2) |
| (5151) | QT-106 CD1 | NO | YES | YES | YES (6) | YES | NO (5) | QUARTERLY (2) |
| | QT-106 CD2 | NO | YES | YES | YES (6) | YES | NO (5) | QUARTERLY (2) |

(1) Bearing Temperature will be measured annually - per Section XI Code Subarticle IWP - 3300, except for the Diesel Fuel Oil Transfer Pumps.

(2) Refer to TABLE B.

(3) Inlet Pressure Measurement is in Head of Liquid.

(4) Refer to TABLE C.

(5) Refer to TABLE D.

(6) Refer to TABLE E

ATTACHMENT NO. 1
AEP:NRC:0730G

DONALD C. COOK NUCLEAR PLANT - UNITS NO. 1 AND 2
PUMP INSERVICE TEST PROGRAM

TABLE A
(CONTINUED)

PROGRAM SUMMARY

- * Pumps are tested on by-pass (test) loops since it is impractical to test in regular circuits - per Section XI Code Subarticle IWP - 1400
- ** Pumps are tested on recirculation (minimum flow) paths to prevent unsafe operating conditions (impractical to align system for full flow test) - per Section XI Code Subarticle IWP - 1400

DONALD C. COOK NUCLEAR PLANT - UNITS NO. 1 AND 2

PUMP INSERVICE TEST PROGRAM

TABLE B

CODE RELIEF REQUEST

Test Frequency

Request that frequency of testing for the Diesel Fuel Oil Transfer Pumps be established on a quarterly basis. *

Operation of both pumps during a monthly test is restricted by the limited capacity of the diesel generator fuel oil day tank. Two pump testing will cause excessive and unnecessary operation of the emergency diesel generators in order to keep the level in the tank from overflowing. Constant draining of the tank to maintain tank level without running the diesel generators is a potential fire and utility hazard. A potential for overflowing the tank is present in either case.

Single pump testing will be conducted during monthly emergency diesel generator operation. Each pump will be tested on a staggered basis (every other month) during a quarterly period.

* Note: This quarterly test frequency is in accordance with the 1980 Edition of Section XI, Subarticle IWP-3400.

DONALD C. COOK NUCLEAR PLANT- UNITS NO. 1 AND 2
PUMP INSERVICE TEST PROGRAM

TABLE C

CODE RELIEF REQUEST

Vibration Measurement

Request that vibration amplitude, as specified in Section XI Subarticle IWP-4510, be measured in terms of velocity, inches per second peak instead of peak to peak displacement.

The major characteristics of vibration are displacement and frequency. Velocity provides a better indication of vibration severity because it includes both displacement and the frequency of displacement.

Since velocity is directly related to displacement, the velocity acceptance criteria for vibration amplitude is consistent to the acceptance criteria for displacement as specified in Table IWP - 3100-2.

DONALD C. COOK NUCLEAR PLANT - UNITS NO. 1 AND 2

PUMP INSERVICE TEST PROGRAM

TABLE D

CODE RELIEF REQUEST

Bearing Temperature Measurement

- a. Request that the pump bearing temperature requirements, per Section XI Subarticle IWP-4310, be amended for the Essential Service Water Pumps.

Except for one bearing assembly located within the motor stand, the remaining shaft bearings are located below the main pump flange and are inaccessible.

In addition to measuring the pump bearing, temperatures will be measured on the motor bearing blocks.

- b. Request that the Diesel Fuel Oil Transfer Pumps be exempt from bearing temperature requirements as stated Section XI Subarticle IWP-3300.

The inboard and outboard sleeve bearings on these 2 HP gear pumps are lubricated and cooled by the pumped fluid. Temperature readings are therefore inconclusive since bearing measurement points are not responsive to the changes in bearing temperature.

Bearing problems on gear pumps can be more readily identified by degradation of pump capacity. Flow rate deterioration indicates the existence of excessive clearances due to bearing wear and problems.

In addition, the code required pump running time for yearly bearing temperature measurement can not be met due to the limited capacity of the diesel generator fuel oil day tank.

DONALD C. COOK NUCLEAR PLANT - UNITS NO. 1 AND 2
PUMP INSERVICE TEST PROGRAM

TABLE E

CODE RELIEF REQUEST

Request that the duration of pump operation for testing, per Section XI Subarticle IWP-3500, be amended for the Diesel Fuel Oil Transfer Pumps.

These pumps supply the diesel generator fuel oil day tank. A conservative level is maintained in the tank to meet the minimum capacity per Technical Specification requirements. Due to the limited capacity of this tank, the pump operating test range is restricted. It is requested to record test parameters immediately after pump operation has stabilized.

