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NEW YORK, N.Y..  
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## DESCRIPTION

LTR. RE. THBER 2-27-76 LTR... NOTAIRIZED 11-23-76... TRANS THE FOLLOWING.....

## ENCLOSURE

ATTACHMENT A, DESCRIBING THE REVISED CIRCUITRY AND VERIFICATION PROEEDURESTO THE CONTROL CIRCUIT MODIFICATION.....

( 1 SIGNED CY. RECEIVED)

( 9 PAGES)

ACKNOWLEDGED

DO NOT REMOVE

PLANT NAME: COOK # 1

## SAFETY

## FOR ACTION/INFORMATION

## ENVIRO

SAB 12-1-76

ASSIGNED AD:		ASSIGNED AD:
BRANCH CHIEF:	ZIEMANN (6)	BRANCH CHIEF:
PROJECT MANAGER:		PROJECT MANAGER:
LIC. ASST.:	DIGGS	LIC. ASST.:

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	RUTBERG		KREGER

## EXTERNAL DISTRIBUTION

IPDR: ST. JOSEPH, MI.	NAT LAB:	BROOKHAVEN NAT LAB	CONTROL NUMBER
TIC:	REG. VTE	WILKSON (ORNL)	
NSIC:	LA PDR		
ASLB:	CONSULTANTS		
ACRS 16CYS HOLDING/EN	CAT		

12006

*Life Assurance*

THE LIFE ASSURANCE COMPANY

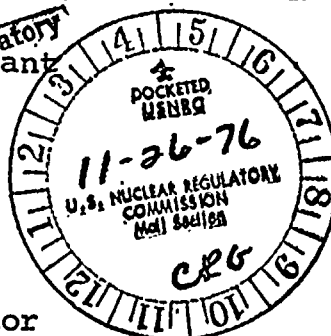
OF NEW YORK

# INDIANA & MICHIGAN POWER COMPANY

P. O. BOX 18  
BOWLING GREEN STATION  
NEW YORK, N. Y. 10004

November 23, 1976

Donald C. Cook Nuclear Plant  
Docket No. 50-315  
DPR No. 58



Mr. Benard Rusche, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Rusche:

In our letter to you of February 27, 1976, we described certain modifications that we proposed, in answer to NRC requirements, to the control circuits for the valves identified in that letter. We also described revisions to the testing procedures for these valves. Attachment A to that letter described the control circuit modifications and the testing procedures. In the period required to make these changes, we took temporary measures that were acceptable to the NRC Staff as indicated in Supplement No. 5 of the Safety Evaluation Report for Unit 1 (January 1976).

Recently, the NRC Staff has, through telephone discussions with us, required us to make revisions to our proposed control circuit modifications and to the verification procedures. In accordance with the new NRC Staff requirements, we submit Attachment A to this letter which describes the revised circuitry and verification procedures. We have been informed that these are acceptable to the NRC Staff.

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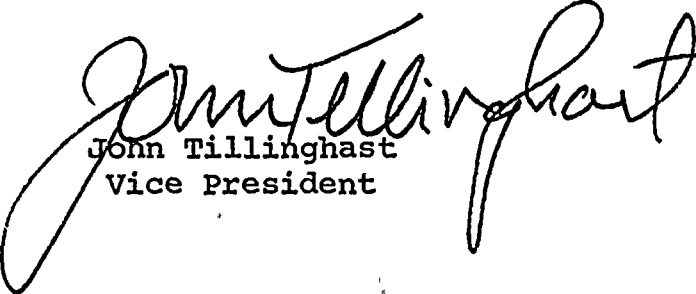
Mr. B. C. Rusche

- 2 -

November 23, 1976

The original modifications are in the process of being implemented at the Plant and we will add these latest revisions in our work.

Very truly yours,

  
John Tillinghast  
Vice President

JT:mam

Sworn and subscribed to before me  
on this 23<sup>rd</sup> day of November 1976  
in New York County, New York

  
Notary Public

KATHLEEN BARRY  
NOTARY PUBLIC, State of New York  
No. 41-4606792  
Qualified in Queens County  
Certificate filed in New York County  
Commission Expires March 30, 1977

cc: G. Charnoff  
P. W. Steketee  
R. C. Callen  
R. J. Vollen  
R. Walsh  
R. W. Jurgensen - Bridgman  
R. S. Hunter

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. 84

1. 1990年12月25日，在“九七”香港回归前，香港各界人士纷纷发表文章，就香港前途问题提出自己的看法。

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Figure 1 consists of 11 line drawings labeled (a) through (k), illustrating the stages of chick development. (a) shows a fertilized egg with a single cell. (b) shows a two-cell stage. (c) shows a four-cell stage. (d) shows an eight-cell stage. (e) shows a morula stage. (f) shows a gastrula stage with visible germ layers. (g) shows a stage with a yolk cell. (h) shows a stage with a yolk cell and embryo. (i) shows a stage with a yolk cell and embryo. (j) shows a stage with a yolk cell and embryo. (k) shows a hatched chick.

[illegible]

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ATTACHMENT A





## DONALD C. COOK NUCLEAR PLANT UNIT 1

### Control Modification

The control to the valves in question will be modified to provide a means of locking out control power independent of the normal valve control equipment and master control switch. The action of locking out the control power will remove power from the valve contactor coils and associated limit, seal in and torque switch circuits, but not remove power to the valve position indication, thus allowing the continued visual indication of valve position on the control panel in the vicinity of the Master Control Switch.

The control power lockout will be accomplished by inserting the contacts of a control switch (one per valve) between the control transformer and the valve positioning contactors.

In addition to the lockout switch, a key-lock assembly will be provided on all master control switches (101), a set of supervisory lamps will be provided across the master control switch contacts in the starter circuit for the direction of concern for spurious valve travel, and a supervisory light and alarm relay will be provided to indicate availability of control power and to alarm the annunciator system. Surveillance testing for the subject valves will follow the following procedures: Item I for outage surveillance where the valve may be repositioned, and II for in-service surveillance where the valve control circuit must be verified but the valve must not be repositioned.

#### I. Verification Procedure

Prerequisites: With the prerequisites for valve testing satisfied, verify the following items:

- A. Control power lockout switch (8) is in the "off" position.
- B. Supervisory "white" light for valve control bus is extinguished.



- C. Supervisory "clear" lights for control switch (101) contact surveillance are extinguished.
- D. Control room annunciator for supervisory function is off.

Procedure:

1. Unlock and hold the Master Control Switch (101) for the valve in the correct position to operate the valve and verify that the valve does not travel.
2. Restore the Master Control Switch to the neutral position and put the control power lockout switch for the valve to the "on" position and verify the following:
  - A. White supervisor lamp lights.
  - B. Clear control switch supervisory lamps light.
  - C. Supervisory annunciator operates.
  - D. Valve does not travel.
3. Put the Master Control Switch in the correct position, to operate the valve and verify that the valve travels to the selected position. Verify that during the time the valve is in travel, the clear supervisory lamps are out and that they remain out at the end of travel.
4. Put the Master Control Switch in the neutral position and verify that the valve remains in desired position.
5. Turn the control power lockout switch to "off" and verify that the supervisory light and alarm indicate control power disconnected.
6. Hold the Master Control Switch in the correct position to return the valve to its original position and verify that the valve does not travel.

7. Return the Master Control Switch to the neutral position and place the control power lockout switch in the "on" position. Verify that the supervisory white light and alarm indicate control power restored.
8. Put the Master Control Switch in the correct position to return the valve. Verify that the valve travels to the selected position.
9. Place Master Control Switch in the neutral position, lock and verify the following:
  - A. Valve remains in desired position.
  - B. Supervisory white light is on.
  - C. Supervisory "clear" lights are on.
  - D. Supervisory alarm indicates control power on.
  - E. Control switch cannot be operated.
10. Place control power lock out switch in the "off" position. Verify the following:
  - A. Supervisory white light is extinguished.
  - B. Supervisory clear lights are extinguished.
  - C. Supervisory alarm clears.

## II. Verification Procedure

Prerequisites: With the prerequisites for control switch contact surveillance testing satisfied, verify the following items:

- A. Control Power lockout switch (8) is in the "off" position.
- B. Supervisory "white" light for valve control bus is extinguished.
- C. Supervisory "clear" light for control switch (101) contact surveillance extinguished.
- D. Control room annunciator for supervisory function is off.



Procedure - Master Control Switch to the normal position and place the control switch in the lockout position.

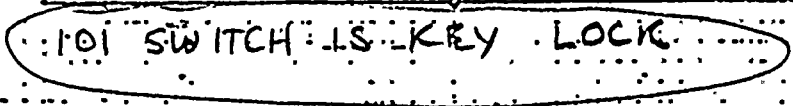
1. Place on the control power lockout switch (8) in the on-position and verify the following:
  - A. Supervisory alarm sounds in the control room but indicating valve is not locked out. Return position to return the alarm.
  - B. Surveillance lamps for 101 switch contacts (two) light indicating contacts are open.
  - C. Control bus supply surveillance lamp lights indicating the control bus to normal valve control circuits is energized.
2. Return the control lockout switch (8) to the normal position (on) and verify that:
  - A. Alarm clears.
  - B. All three indicating lamps are extinguished.

Verification of Success

Prerequisites: With the valve in the normal position, the control switch contact surveillance testing shall be performed on the following items:

- A. Control power lockout switch (8) in the on position.
- B. Supervisory alarm light for control bus is extinguished.
- C. Supervisory clear light for 101 switch contacts (101 contact surveillance lamp) is extinguished.
- D. Control room annunciator for supervisory alarm is extinguished.

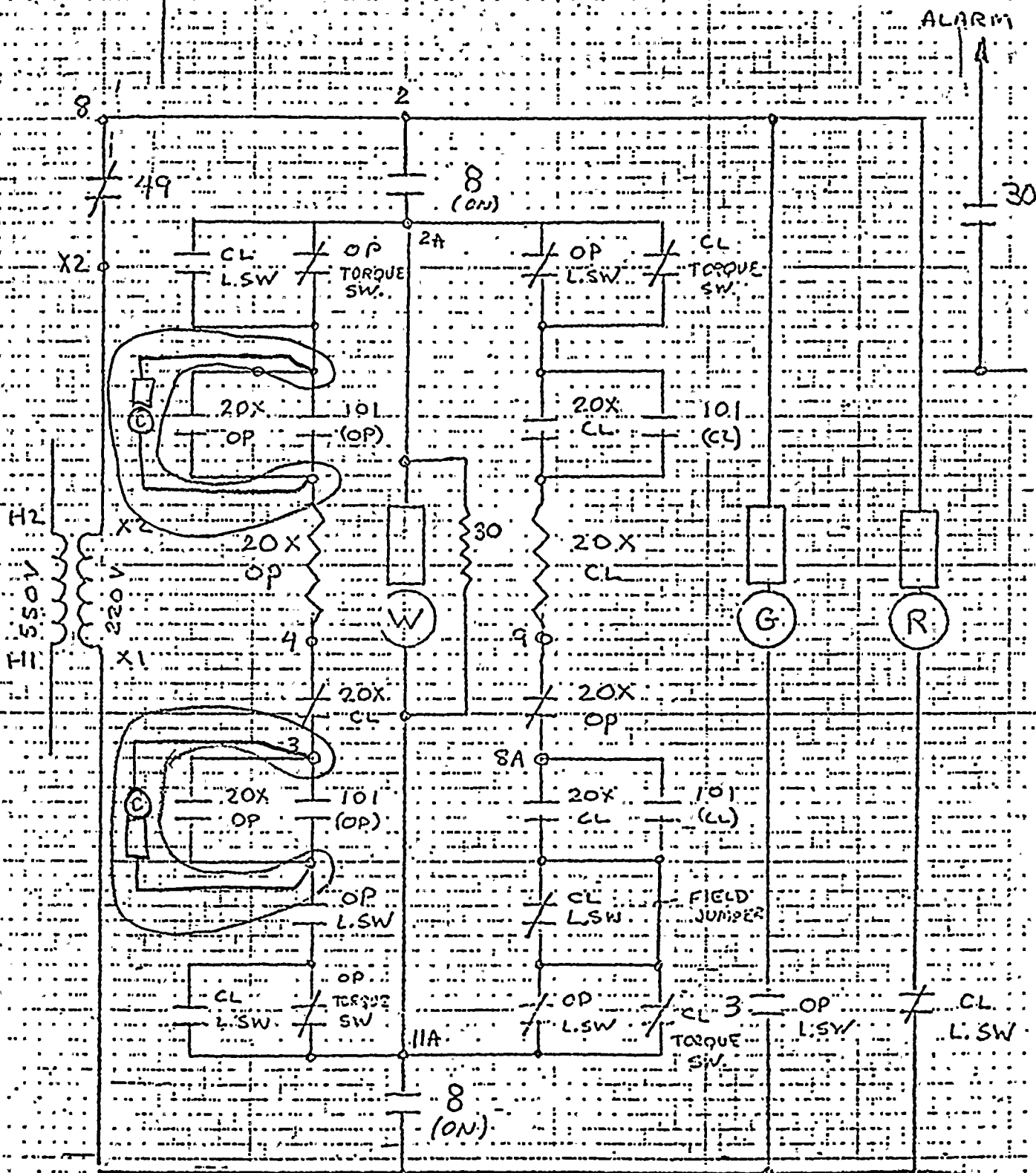
ALARM







# Donald C. Cook Nuclear Plant Unit No. 1



101 SWITCH IS KEY LOCK



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