

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8404170087 DOC. DATE: 84/04/10 NOTARIZED: NO DOCKET #
 FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244
 AUTH. NAME: AUTH. AFFILIATION
 KOBER, R. W. Rochester Gas & Electric Corp.
 RECIP. NAME: RECIPIENT AFFILIATION
 CRUTCHFIELD, D. Operating Reactors Branch 5

SUBJECT: Submits final response to Generic Ltr 83-10D, "Resolution of TMI Action II.K.3.5, "Automatic Trip of Reactor Coolant Pumps." Reactor coolant pump trip criterion based on primary & secondary sys pressure implemented.

DISTRIBUTION CODE: A046S COPIES RECEIVED: LTR 1 ENCL 0 SIZE: 3
 TITLE: OR Submittal: TMI Action Plan Rgmt NUREG-0737 & NUREG-0660

NOTES: NRR/DL/SEP 1cy.

05000244

RECIPIENT ID CODE/NAME		COPIES LTTR ENCL		RECIPIENT ID CODE/NAME		COPIES LTTR ENCL	
NRR ORBS BC 01		7					
INTERNAL:	ELD/HDS4	1	0	IE/DEPER DIR	33	1	
	IE/DEPER/EPB	3	3	IE/DEPER/IRB		1	
	NRR ERICKSON, P	1	1	NRR PAULSON, W.		1	
	NRR/DHFS DEPY29	1	1	NRR/DL DIR	14	1	
	NRR/DL/ORAB 18	3	3	NRR/DSI/ADRS	27	1	
	NRR/DSI/AEB	1	1	NRR/DSI/ASB		1	
	NRR/DSI/RAB	1	1	NRR/DST DIR	30	1	
	REG FILE 04	1	1	RGN1		1	
EXTERNAL:	ACRS	34	10	LPDR	03	1	
	NRC PDR	02	1	NSIC	05	1	
	NTIS		1				
NOTES:		1	1				

TOTAL NUMBER OF COPIES REQUIRED: LTTR 42 ENCL 41

[REDACTED]

Figure 1

1. The first step is to identify the problem. This involves understanding the nature of the problem, its scope, and its impact.

On 11/11/1961, the following information was received from the Bureau of the Census, Washington, D.C.:

5. The following information is provided for the year ended 31/12/2019:
 (a) The company's revenue is \$1,000,000. The cost of sales is \$600,000. The gross profit is \$400,000. The operating expenses are \$200,000. The operating profit is \$200,000. The interest expense is \$50,000. The interest income is \$10,000. The profit before tax is \$160,000. The tax expense is \$40,000. The profit after tax is \$120,000.

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

[illegible]

THE

Journal of Management Education

Figure 1 shows a human karyotype with 46 chromosomes arranged in 23 pairs. The pairs are numbered 1 through 22, with the 23rd pair being the sex chromosomes (X and Y). The chromosomes are arranged in four rows: the first row has pairs 1-5, the second row has pairs 6-10, the third row has pairs 11-15, and the fourth row has pairs 16-22, followed by the X and Y chromosomes.

[illegible][illegible][illegible][illegible]

2004

THE

RECORD OF THE

PROCEEDINGS OF THE

COUNCIL OF THE DISTRICT OF COLUMBIA

FOR THE YEAR 1907

PUBLISHED BY THE DISTRICT OF COLUMBIA

WASHINGTON, D.C.

1908



ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649-0001

ROGER W. KOBER
VICE PRESIDENT
ELECTRIC & STEAM PRODUCTION

TELEPHONE
AREA CODE 716 546-2700

April 10, 1984

Director of Nuclear Reactor Regulation
Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Final Response to Generic Letter No. 83-10d,
"Resolution of TMI Action Item II.K.3.5,
Automatic Trip of Reactor Coolant Pumps"
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

Previous letters dated April 22, 1983 and December 21, 1983 presented the plan for demonstrating compliance with the criteria for resolution of TMI Action Plan Requirements Item II.K.3.5 which were established in Generic Letter No. 83-10d from Mr. Darrell G. Eisenhower dated February 8, 1983. The submittals which fulfill the established requirements have been transmitted to you by Westinghouse Owners Group letters OG-117, dated 3/12/84 and OG-110, dated 12/1/83.

Section I of the attachment to NRC letter 83-10d discusses "Pump Operation Criteria Which Can Result in RCP Trip During Transients and Accidents". Subsection 1 of Section I presents guidelines for establishing setpoints for RCP Trip. The Westinghouse Owners Group response to this section of NRC Letter 83-10d is contained in Revision 1 to the WOG Emergency Response Guidelines, which has been issued to member utilities. The implementation date for the Ginna Emergency Operating Procedures including Revision 1 is December 1985.

The RCP Trip Criterion based on primary and secondary system pressure has been implemented at Ginna. This criterion not only assures RCP trip for all losses of primary coolant for which trip is considered necessary but also permits RCP operation to continue during most non-LOCA accidents, including steam generator tube rupture events up to the design basis double-ended tube rupture. The generic applicability of the RCP trip criterion selected has been documented by the Westinghouse Owners Group Report entitled, "Evaluation of Alternate RCP Trip Criteria", which has been submitted to the NRC for review in letter OG-110.

8404170087 840410
PDR ADDCK 05000244
P PDR

A046
1/0

003

which is

and over
the side

see a
see a

DATE April 10, 1984

TO Mr. Dennis M. Crutchfield

The Westinghouse Owners Group has also submitted to the NRC, via letter OG-117, the report entitled, "Justification of Manual RCP Trip for Small Break LOCA Events". As stated above, these submittals completed the WOG documentation comprising a generic reply to NRC Generic Letter 83-10d.

Subsection 2 of Section I of the attachment to NRC Letter 83-10d provides guidance for justification of manual RCP trip. Subsection 2a requires that compliance with 10 CFR 50.46 be demonstrated in an Appendix K small break LOCA analysis given that the RCPs are tripped two minutes after the onset of reactor conditions corresponding to the RCP trip setpoint. The Westinghouse Owners Group has generically verified, in the OG-117 submittal, that predicted LOCA transients presuming the two minute delayed RCP trip are nearly identical to those presented in Safety Analysis Reports utilizing the WFLASH Evaluation model. Thus, the docketed small break LOCA analysis for Ginna demonstrates its compliance with the Subsection 2a guidelines.

The WOG has also performed most probable, best estimate, WFLASH analyses to demonstrate, generically, compliance with the guidelines presented in Subsection 2b of Section I of the attachment to NRC Generic Letter 83-10d. These analyses identify that the minimum time available for operator action for the complete range of LOCA break sizes exceeds the value contained in ANSI N660; they show that reactor coolant pumps may be tripped at any time during a LOCA event without resulting in excessive clad temperatures. The applicability information presented in the generic report affirms the applicability of this best estimate analysis to Ginna. Therefore, in combination with the Subsection 2a justification cited above, the best estimate analyses justify that manual RCP trip is acceptable for Ginna when RCP trip setpoints consistent with Revision 1 to the Emergency Response Guidelines are in use. Furthermore, the generic report demonstrates that no additional contingency emergency procedures are required to address the scenarios which may follow a missed RCP trip setpoint.

In response to section I, subsection 3a and 3c of 83-10d, the instrumentation used to determine if RCPs should be tripped is the primary system wide range pressure indication and the steam generator pressure indication. There are two primary system-wide range transmitters and six steam generator pressure transmitters (three transmitters per steam generator). All transmitters are qualified to IEEE 323-1974 and IEEE 344-1975.

Operators have been trained in the use of the RCP trip criteria.

1947 10 10

1947 10 10
S. H. 10 10

1947 10 10

1947 10 10

1947 10 10

1947 10 10
S. H. 10 10

1947 10 10

1947 10 10

ROCHESTER GAS AND ELECTRIC CORP.

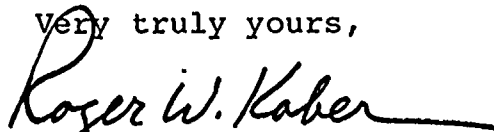
SHEET NO. 3

DATE April 10, 1984

TO Mr. Dennis M. Crutchfield

In summary, the generic information presented by the Westinghouse Owners Group in the reports entitled "Evaluation of Alternate RCP Trip Criteria" and "Justification of Manual RCP Trip for Small Break LOCA Events" provides the response to NRC Generic Letter 83-10d for Ginna. The implementation of Revision 1 to the Emergency Response Guidelines in the plant-specific procedures with the current RCP trip setpoint resolves all issues associated with automatic tripping of the reactor coolant pumps.

Very truly yours,


Roger W. Kober

THE ROSSIA 2 111

THE ROSSIA 2 111