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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MAR 2 8 1984

MEMORANDUM FOR: Chairman Palladino
Commissioner Gilinsky
Commissioner Roberts
Commissioner Asselstine
Commissioner Bernthal

FROM: William J. Dircks
Executive Director for Operations

SUBJECT: LER DATA ON PERSONNEL ERRORS

In response to the memorandum, S. J. Chilk to W. J. Dircks, dated March 2, 1984, Subject: "Staff Requirement Briefing on Status of Grand Gulf," I am providing the following report dealing with operating experience at Grand Gulf. This report addresses the following two subjects which were available in preliminary form at the meeting:

1. A count by plant of all LERs for events that occurred in 1983.

2. A count by plant of all LERs reported in 1983 that included at least one personnel error. [Errors that were not attributable to the plant operating staff (i.e., construction errors, design errors, fabrication errors) were not included].

Two previous reports addressing similar aspects of operating experience at Grand Gulf are also enclosed.

The requested data, including comparable counts for 1981 and 1982, are provided in Enclosure 1.

AEOD obtained the data by searching the Sequence Coding and Search System (SCSS) for LERs submitted in 1983 and for LERs that stated or implied that a personnel error was involved in the event.

Because of the extensive amount of information from each LER that is coded in the SCSS, it was not necessary to rely on text searches for particular words (e.g., "personnel error") or to rely on the data coded by the licensee on the LER form. Thus, if the LER text expressly stated that a "personnel error" occurred, or if the LER implied that a personnel error occurred (e.g., "Inadvertently he operated an incorrect valve"), the information was coded into SCSS and was captured by the subsequent search.

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This data is provided in response to the specific request. However, the staff is concerned that the data could be easily misinterpreted. The plants included in Enclosure 1 vary considerably; for example, with respect to the number of years that they have been in operation. Many of these plants have been in operation for several years and have completed the initial "debugging" phase when many equipment problems occur and procedural deficiencies are found. Conversely, some plants (e.g., Grand Gulf) are still in this startup testing phase when large numbers of problems and errors are identified and reported. To place the startup experience at Grand Gulf in better perspective, AEOD searched the SCSS data base for the total number of LERs and the number of LERs that contain at least one personnel error for plants in the startup phase of plant operation. Specifically, AEOD obtained counts of LERs (Table 1) for several plants for the twelve months immediately following issuance of the Low Power Operating License.

TABLE 1

OPERATIONAL EXPERIENCE DURING THE TWELVE MONTHS
IMMEDIATELY FOLLOWING ISSUANCE OF A LOW POWER OPERATING LICENSE

Docket	Facility	Low Power License	Total LERs	Personnel Error LERs*	% Personnel Error LERs
416	Grand Gulf	6/16/82	256	86	34
387	Susquehanna	7/17/82	179	74	41
361	San Onofre 2	2/16/82	186	67	28
373	La Salle	4/17/82	187	67	28
369	McGuire	6/12/81	149	64	43
395	Summer	8/6/82	153	57	37
362	San Onofre 3	11/15/82	93	27	29
328	Sequoyah 2	6/25/81	65	26	40

* The information presented here is based on information available to the staff and has not been verified with the individual licensees.

As indicated in Table 1 and Enclosure 1, Grand Gulf has submitted more LERs and reported more personnel errors than the other units. However, Grand Gulf is the first BWR 6 in the country. As such, there were no personnel previously experienced in preparing procedures or operating this specific model reactor. Even vendor personnel had minimum or no experience with this type reactor. As a result, Grand Gulf may have been more susceptible to personnel errors than, for example, San Onofre 2 and 3 and Sequoyah 2 which are more standard in design. In addition, Sequoyah 2 was the second unit started at that site in a short period. Both San Onofre 3 and Sequoyah 2 had operating personnel with more directly applicable experience. This may have contributed to fewer LERs.

In addition, care should be taken in reaching firm conclusions from this data. Just as there is a risk of focusing too closely on individual events, a number of difficulties are associated with any collective analysis of LER data. For example, when events are reduced to counts they lose their individual identity. This homogenization means all events are treated as if they were

all reported on the same basis and had the same individual significance -- which often is not the case. Many of the errors reported by Grand Gulf, for example, were missed surveillance requirements that did not directly affect plant operation.

Finally, any variation which is due to factors other than differences in actual safety performance will give a spurious indication of a problem. For example, Region II has indicated that it has a low threshold for requiring licensees to report, and that this was particularly true for Grand Gulf. Such variations are discussed in detail in Appendix E or NUREG-0572, "Review of Licensee Event Reports," which was prepared by the ACRS in 1979. A copy of Appendix E to NUREG-0572 was forwarded to the Commission with my memorandum dated February 24, 1984.

Because of the many factors involved, an apparent trend or pattern in the data does not necessarily imply a real safety problem. Such an apparent trend or pattern requires study to determine the underlying factors and to properly assess the implications and significance of the variations. This in-depth analysis has not been done for the data provided in Table 1 and Enclosure 1.

Region II has performed a review of the LERs issued during the period September 1, 1982 through September 30, 1983, for which personnel error was designated by the licensee as the root cause. Region II found that none of the events had an affect on the health and safety of the public, and the majority did not have the potential for resulting in an event which could have an affect on public health and safety.

In conclusion, while we have provided the requested LER count data, we believe that it is not appropriate and may in fact be misleading to use raw LER counts in isolation as a relative or absolute measure of safety performance. In addition, this practice has the undesired side effect of motivating licensees to minimize the number and content of LERs instead of sharing information for the benefit of all.

(Signed) William J. Dircks

William J. Dircks
Executive Director for Operations

Enclosures:
1. LER Count Data For 1981-1983
2. Grand Gulf Operating Experience
3. Personnel Errors At Selected Operating Plants

bcc: See Page 4
cc w/enclosures:
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Enclosure 1

LER Count Data For 1981-1983

Docket Number	Facility	LERs 1981	LERs 1982	LERs 1983	Personnel Error LERs 1981	Personnel Error LERs 1982	Personnel Error LERs 1983
29	Yankee Rowe	33	42	37	5	6	4
133	Humboldt Bay	5	8	1	1	1	1
155	Big Rock Point	27	35	14	3	6	3
206	San Onofre 1	29	26	5	13	11	3
213	Connecticut Yankee	19	10	18	4	3	1
219	Oyster Creek	72	61	19	22	23	9
220	Nine Mile Point 1	43	18	22	8	3	7
237	Dresden 2	75	53	61	22	12	12
244	Ginna	22	28	28	8	8	9
245	Millstone 1	39	32	28	5	6	4
247	Indian Point 2	33	49	37	4	4	3
249	Dresden 3	33	44	36	4	6	8
250	Turkey Point 3	17	18	17	6	7	8
251	Turkey Point 4	17	14	15	2	6	6
254	Quad Cities 1	24	37	36	4	7	8
255	Palisades	53	49	69	13	11	10
259	Browns Ferry 1	83	91	56	16	21	13
260	Browns Ferry 2	65	35	58	19	7	9
261	Robinson 2	33	18	27	15	6	4
263	Monticello	24	15	8	6	4	3
265	Quad Cities 2	25	21	20	4	2	5
266	Point Beach 1	19	27	7	7	11	4
269	Oconee 1	25	20	18	9	9	9
270	Oconee 2	20	11	7	5	3	2
271	Vermont Yankee	36	26	24	5	4	7
272	Salem 1	118	88	45	24	21	17
275	Diablo Canyon 1	9	12	23	5	6	8
277	Peach Bottom 2	44	42	22	11	11	5
278	Peach Bottom 3	21	26	15	3	4	3
280	Surry 1	83	116	42	22	31	10
281	Surry 2	81	70	37	24	18	5
282	Prairie Island 1	18	13	5	8	6	3
285	Ft. Calhoun 1	11	20	8	1	4	2
286	Indian Point 3	10	4	5	2	0	1
287	Oconee 3	16	14	11	6	5	7
289	Three Mile Island 1	13	16	40	5	5	15
293	Pilgrim 1	58	54	52	13	20	10
295	Zion 1	51	50	45	17	10	12
296	Browns Ferry 3	71	51	50	8	11	6
298	Cooper	25	25	15	12	8	6
301	Point Beach 2	8	11	10	2	5	2
302	Crystal River 3	80	76	45	12	21	16
304	Zion 2	38	29	40	8	7	11
305	Kewaunee	38	35	25	12	5	7
306	Prairie Island 2	11	11	8	3	3	2

Docket Number	Facility	LERs 1981	LERs 1982	LERs 1983	Personnel Error LERs 1981	Personnel Error LERs 1982	Personnel Error LERs 1983
309	Maine Yankee	23	39	30	11	11	12
311	Salem 2	123	153	55	25	31	26
312	Rancho Seco	55	31	31	9	12	13
313	Arkansas Nuclear 1	14	30	24	5	9	5
315	Cook 1	64	107	101	18	43	26
316	Cook 2	70	109	104	13	33	29
317	Calvert Cliffs 1	84	82	54	17	24	14
318	Calvert Cliffs 2	57	54	58	9	14	15
320	Three Mile Island 2	32	34	46	13	8	15
321	Hatch 1	140	96	94	33	37	20
324	Brunswick 2	145	136	87	24	38	23
325	Brunswick 1	94	143	46	22	35	20
327	Sequoyah 1	133	77	85	37	16	17
328	Sequoyah 2	27	65	64	14	17	9
331	Arnold	49	81	39	14	18	7
333	Fitzpatrick	78	53	45	21	20	7
334	Beaver Valley 1	102	55	26	21	9	6
335	St. Lucie 1	60	70	26	11	13	7
336	Millstone 2	45	51	25	13	13	4
338	North Anna 1	87	88	70	20	19	13
339	North Anna 2	89	84	67	30	30	21
344	Trojan	31	22	15	13	11	9
346	Davis Besse 1	79	68	55	33	29	16
348	Farley 1	73	62	70	23	11	11
361	San Onofre 2	-	169	124	-	64	41
362	San Onofre 3	-	10	84	-	6	22
364	Farley 2	57	52	37	16	12	10
366	Hatch 2	133	135	117	31	50	29
368	Arkansas Nuclear 2	44	49	45	11	13	15
369	McGuire 1	187	82	100	78	37	32
370	McGuire 2	-	-	64	-	-	28
373	La Salle 1	-	151	116	-	52	36
387	Susquehanna 1	-	80	141	-	38	51
389	St. Lucie 2	-	-	63	-	-	18
395	Summer	-	65	123	-	28	38
409	Lacrosse	15	20	7	5	6	4
416	Grand Gulf 1	-	181	162	-	57	60