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SUMMARY/MINUTES OF THE ACRS SUBCOMMITTEE
ON MECHANICAL COMPONENTS
OCTOBER 3, 1989
BETHESDA, MARYLAND

The ACRS Subcommittee on Mechanical Components met with the NRC Staff on October 3, 1989, at Bethesda, Maryland to 1) discuss C. Michelson's concern on Generic Letter 89-10, 2) be briefed on the recent MOV failures to close against velocity flow, 3) hear status report on action plan on check valves, 4) review the implementation plan on MOV operability, 5) hear the implementation plan on MOV operability, 5) hear an overview on Generic Letter 89-04 concerning in-service testing of pumps and valves, and 6) review the preliminary test results on MOV's being performed in FRG.

Notice of the meeting was published in the Federal Register on September 19, 1989. The schedule of items covered in the meeting and a list of handouts are kept with the office copy. There were no written or oral statements received or presented from members of the public at the meeting. E. G. Igne was Cognizant ACRS Staff Member for the meeting.

Principal Attendees

ACRS	NRC	Others
C. Michelson, Chairman	F. Cherny	C. Callaway, NUMARC
C. Wylie, Member	O. Rothberg	W. Pierce, Consultant
J. Carroll, Member	R. Kissel	E. Hale, Bechtel
C. Siess, Member	T. Scarbrough	R. Fell, NUS
I. Catton, Member	R. Baer	
P. Wohld, ACRS Consultant	E. Brown	
	D. Persinko	
	W. Minners	

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Highlights

1. O. Rothberg, RES, discussed C. Michelson's concern regarding design basis requirements defined in Generic Letter 89-10. He stated that design basis is defined in the regulations, FSAR, Commission orders, and post licensing commitments. Deficiencies in the design basis scenarios are not within the scope of Generic Letter 89-10. He further stated that there does not appear to be a clear regulatory guidance regarding deficiencies in the design basis itself, absent any event or plant physical condition which would mandate a 10 CFR 50.72 or 50.73 response. Further, he stated that the generic letter was written to recommend that licensees investigate the response of MOV's of the currently applicable design basis scenarios. The letter does not recommend any changes to those events and conditions, and therefore adjustment of MOVs would be in accordance with the parameters identified from the study of the existing design basis events and conditions.

The subcommittee felt that this is not adequate in light of recent on-going MOV tests, and suggested that ACRS comments on this matter may be necessary.

2. T. Scarbrough, NRR, discussed MOV failures to close against differential pressure in nuclear power plants. Catawba and Millstone concerns in this area have been raised by on-going research and plant operating experience. For example, preliminary results of NRC research reveal that the thrust required to close a valve under full flow conditions may be much larger than anticipated. Among the possible

contributors, individually or in combination, to the MOV failures to close are valve design, stem thrust analysis, and switch settings. One particular area of concern is that valve friction factors supplied by the manufacturer have been found to differ significantly from licensee-determined valves. NRR recently sent a letter to NUMARC requesting that EPRI perform research addressing design and qualification of MOVs. The NRC staff also informed licensees attending the workshop on Generic Letter 89-10 that application of test data from prototype must be justified even if the MOV is assumed to be identical.

T. Scarbrough, next discussed the proposed action plan for MOVs. NRC activities in this area are on-going in NRR, RES and AEOD. Other activities are by EPRI, INPO, NUMARC and ASME. These activities include plant visits, guidelines for implementation of Generic Letter 89-10, signature tracing technique improvements, MOV design improvements, IEEE maintenance practices and codes on inspecting and qualification of MOV's. These efforts should eventually lead to rules and regulatory guidance for a more reliable MOV.

Based on the San Onofre event, the NRC staff issued a staff requirements memorandum on February 1986, requiring performance of generic analysis of check valve failures. NRR, RES and AEOD are actively involved in this activity. Generic Issue 105, Interfacing Systems LOCA at LWRs is the primary mechanism leading to resolution of this matter. INPO, EPRI and ASME are also involved. The effort for the resolution on check valve operability and qualification program is now quite similar to the MOV concern.

3. R. Woods, NRR, reported in some preliminary results of testing performed in the FRG. The first of a second series of blowdown tests on flexible wedge isolation valves in a high flow velocity, hot water environment was recently completed. This accident environment is typical of that which can be expected to occur should a RWCU pipe develop a guillotine break outside a BWR containment. The tests are intended to provide important technical information on valve closure thrust requirements, motor operator diagnostic equipment measurements and capabilities related to Generic Issue 87, "Failure of the HPCI Steam Line Without Isolation." Preliminary results and observations from the first test indicated that the disc travel was within 0.5 inches of complete closure at operator trip. Therefore, the valve failed to completely isolate all flow. The thrust plot indicates that the disc and guides may have experienced damage during closure. These results are similar to those obtained at Wylie Laboratory.

Tests performed on a more flexible valve (with increase disc gate gap) under similar test conditions were successful -- closed fully when operator tripped. This test was repeated three times -- all fully closing and isolating flow.

4. T. Sullivan, NRR, presented a brief overview on Generic Letter 89-04, "Guidance on Developing Acceptable In-service Testing Programs." C. Michelson stated that this generic letter was not reviewed by the ACRS and asked the subcommittee if we should comment on it after the presentation was heard.

The purposes of the generic letter are to provide generic guidance on significant in-service testing (IST) areas, provide guidance on developing acceptable IST programs, and clarify approval status of IST programs. He stated that no written technical guidance on IST programs existed and huge volumes of programs, revisions, and relief requests from the industry were innudating the branch. Further, relief requests were unreviewed and implemented without prior NRC approval which is contrary to Tech. Spec. 4.0.5. Inspection effectiveness was also hampered.

IST problem areas exist in code interpretations, Technical Specifications interpretations, and approved alternatives to code requirements.

Workshops on Generic Letter 89-04 were held in the regions in June 1989. Minutes of the workshops were sent to CRGR for consideration on September 6, 1989. The subcommittee requested a copy of the minutes and the staff will provide us with a copy. CRGR will be briefed on this matter on October 11, 1989.

Subcommittee Action

After deliberations, the subcommittee decided not to comment on Generic Letter 89-04, and will comment on Generic Letter 89-10. A subcommittee report without NRC staff participation will be made to the full ACRS at the October 1989 meeting.

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Minutes/Mechanical Components Meeting 6
October 3, 1989

NOTE: A transcript of the meeting is available at the NRC Public Document Room, Gelman Bldg. 2120 "L" Street, NW., Washington, D.C. Telephone (202) 634-3383 or can be purchased from Heritage Reporting Corporation, 1220 "L" Street, NW., Washington, D.C. 20005, Telephone (202) 628-4888.