

# REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL: 50-244 Robert Emmet Ginna Nuclear Plant, Unit 1, Rochester G 05000244  
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 RECIP. NAME RECIPIENT AFFILIATION  
 ZIEMANN, D. L. Operating Reactors Branch 2

SUBJECT: Responds to conversation w/NRC re dependence of turbine driven auxiliary feedwater sys on AC power & request to commit to demonstrate operability of sys w/o reliance on AC power. Believes no sys changes necessary.

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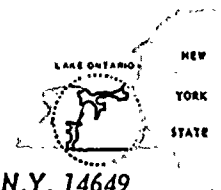
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LEON D. WHITE, JR.  
VICE PRESIDENT

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August 16, 1979

Director of Nuclear Reactor Regulation  
Attention: Mr. Dennis L. Ziemann, Chief  
Operating Reactors Branch No. 2  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Auxiliary Feedwater System  
R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

Dear Mr. Ziemann:

In recent conversations with members of the NRC Staff regarding the preliminary recommendations of the "Bulletins and Orders Task Force", questions were raised concerning the dependence of the Ginna turbine driven auxiliary feedwater (TDAFW) system on AC power. Our TDAFW pump uses service water for cooling of the turbine bearing lube oil and pump end bearing, and thus, relies on either offsite or emergency onsite AC power. We were asked to commit to demonstrate operability of the system without any reliance on AC power or to commit to a modification which would accomplish this.

A loss of all AC power (including offsite power and both diesel generators) is not a credible sequence of events in the Ginna accident analysis design basis. During ten years of commercial operation at Ginna, there have been only three instances of diesel generator failure; none of these instances involved the failure of both diesel generators. Furthermore, there have been only two loss of offsite power transients at Ginna. During these losses of offsite power, the diesel generators have never failed to start. It is thus apparent that the reliability of the Ginna AC systems is very high. Without specific negative findings for Ginna, we do not find it appropriate that the Staff require Ginna to evaluate a new, very low probability, accident scenario.

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TO Director of Nuclear Reactor Regulation

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Further, it is useful to note that this loss of all AC power is an NRC Category B Generic Activity (Station Blackout-B57) for which the NRC has not yet developed analysis groundrules or acceptance criteria. It is apparent from the previous NRC effort in this area that this event is considered of sufficiently low probability that questions regarding Ginna capability to mitigate such an event do not pose any immediate danger to the health and safety of the public.

Nevertheless, based on our confidence that the Ginna TDAFW pump could operate for an acceptably long period of time without any reliance on AC power, we have performed a test to confirm this confidence.

The pump which was tested is a Worthington Corporation Model 3WTL-87 with a Worthington Type S turbine drive. Temperature limits on the turbine bearing lube oil and the pump end bearing, the only two items cooled by the service water, are 180°F and 150°F, respectively. In the test performed on August 10, 1979, the TDAFW pump was successfully operated for one hour forty-five minutes with no service water; thus with no reliance on AC power. For the first thirty minutes, the pump was operated with only a small amount of steam admission flow to the turbine. Only a small temperature rise was noted at the affected bearings. Steam admission flow was then increased, and for the subsequent 75 minutes, the pump was on full recirculation flow (25% of full flow, which is 50% of the minimum safeguards required flow). Even though the pump was running at less than full capacity, the pump and turbine speeds were the same as which would have been attained at full flow. Thus, bearing friction loads were comparable. Also, steam admission flow to the turbine increases only slightly when pump flow is increased, and thus steam heat addition to the lube oil would be only slightly greater at either minimum safeguards flow or full pump capacity. It is thus considered that the recirculation flow test which was conducted was representative of a full-flow test. During the entire test, the pump was monitored and all pertinent parameters remained within acceptable ranges (specifically, the lube oil and bearing reached a final test temperature of about 120°F). Further, operating parameters were stable over the last fifteen minutes of the test so that the operation could have continued without problems, had it been deemed necessary.

Based on this test, it is our position that the Ginna TDAFW system is operable without reliance on AC power for an acceptably long period of time and that no system changes, either in the short term or the long term, are necessary.

Very truly yours,

*L.D. White, Jr.*

L.D. White, Jr.

