



Westinghouse  
Electric Corporation

Water Reactor  
Divisions

Nuclear Technology Division

Box 355  
Pittsburgh Pennsylvania 15230-0355

December 13, 1985  
NS-NRC-85-3089

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Ref: Letter from E. P. Rahe, Jr., to H. R. Denton, NS-NRC-85-3071, dated  
October 7, 1985. Subject: Topical Reports WCAP-8822-P-S2 and  
WCAP-8860-S2.

Additional Information on Topical Reports  
WCAP-8822-P-S2 and WCAP-8860-S2  
"Impact of Steam Superheat in Mass/Energy  
Releases Following a Steamline Rupture for  
Dry and Subatmospheric Containment Designs"

Dear Mr. Denton:

Westinghouse was requested internally by members of your staff to provide additional information to support the review of the referenced topical reports. In particular, it was requested that information be supplied concerning the sensitivity of results to delaying the actuation of containment sprays and the resultant impact on the conclusions of WCAP-8822 Supplement 2. The attachment to this letter is supplied in response to this request.

This letter may be referenced as part of license applications for Georgia Power Company (Vogtle) and Northeast Utilities Services Company (Millstone 3).

Please feel free in contacting M. P. Osborne, Manager, Transient Analysis II, if you have any questions concerning this matter.

Very truly yours,

E. P. Rahe, Jr. Manager  
Nuclear Safety Department

RJM/bek/0970n  
Attachment

8512240114 851213  
PDR TOPRP EMVWEST  
C PDR

T 010  
/11

ATTACHMENT TO NS-NRC-85-3089

Question

What is the impact of delaying containment spray start time on the conclusions reached in WCAP-8822-S2, "Impact of Steam Superheat in Mass/Energy Releases Following a Steamline Rupture for Dry and Subatmospheric Containment Designs"?

Response

Delaying the initiation of containment sprays will not adversely impact the results or change the conclusions of WCAP-8822-S2. The inclusion of superheat in steamline break mass and energy releases has little impact on peak temperatures and peak pressures for dry and subatmospheric designs. This conclusion applies irrespective of the containment spray delay time used. While delaying spray initiation can result in an increase in both peak pressure and peak temperature, the increase will be effectively the same for mass/energy releases with and without superheat.

This conclusion is based upon analyses performed in support of WCAP-8822-S2. These analyses included analyses which assume no spray actuation. While an increase in peak temperature was observed in some of the cases without sprays, the impact of superheat on peak temperature was minimal and consistent with the results and conclusions of WCAP-8822-S2.