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AMENDMENT NO. 2

TO

LICENSE APPLICATION

FOR

VALLECITOS EXPERIMENTAL SUPERHEAT REACTOR

Re: Docket 50-183

T. Hazard, IS

GENERAL ELECTRIC COMPANY
ATOMIC POWER EQUIPMENT DEPARTMENT
2151 South First Street
San Jose, California

AMENDMENT NO. 2
TO
LICENSE APPLICATION
FOR
VALLECITOS EXPERIMENTAL SUPERHEAT REACTOR

[General Electric submitted an application dated February 1, 1961, to construct and operate the Vallecitos Experimental Superheat Reactor. General Electric now desires to amend its application to revise information provided in GEAP-3643 relative to fission product gas release from the uranium dioxide fuel material. General Electric hereby amends GEAP-3643 of its application as follows:]

1. In paragraph IV.G.5.3, delete the last two sentences which read

"Experiments with UO_2 fuel pellets have shown that for UO_2 operating temperature below about 4000°F , the release of gaseous fission products is less than 1%. If the same accident which caused the cladding to melt also caused the UO_2 temperature to reach $4000\text{-}5000^\circ\text{F}$, then the release of gaseous fission products would be substantially greater. "

and substitute therefor the following:

"Irradiation experiments with UO_2 fuel pellets in fuel segments and capsules have shown that for peak UO_2 temperatures near the peak operating value for VESR of about 2500°F , the release of gaseous fission products from the UO_2 is less than 2%. For a peak UO_2 temperature of about 4000°F , the associated fission gas release would be about 10%. The percentage release increases substantially in the $4000\text{-}5000^\circ\text{F}$ UO_2 temperature range. Thus, the amount of fission gas release in the event of cladding melting or failure would be dependent upon the peak UO_2 temperature reached during the incident, as well as upon the normal irradiation temperatures of the UO_2 . "

2. In paragraph IV.L.2.2, delete the seventh sentence which reads

"When the first fuel material reaches 4000°F , a larger fraction of the gaseous and volatile fission products will be released. "

and substitute therefore the following:

"As the peak UO_2 temperatures increase from cladding melting temperature up to 4000°F , the gaseous fission product release will increase from less than 2% to about 10%. For the "maximum credible accident" analysis, it is conservatively assumed that all the noble gas fission products and half of the halogen fission products are released from each increment of UO_2 as it reaches 4000°F ."

3. All other conditions remain the same.

To the best of my knowledge and belief, the information contained herein is accurate.

GENERAL ELECTRIC COMPANY
ATOMIC POWER EQUIPMENT DEPAR

George White (Signed 3/24/61)

George White
General Manager

ATTEST:

Charles W. Wilder

Attesting Secretary

Subscribed and sworn to before me this
27th day of March, 1961.

F. E. Lord

Notary Public in and for the County
of Santa Clara, State of California.

My Commission expires September 5, 1964

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"As the peak UO_2 temperatures increase from cladding melting temperature up to 4000°F , the gaseous fission product release will increase from less than 2% to about 10%. For the "maximum credible accident" analysis, it is conservatively assumed that all the noble gas fission products and half of the halogen fission products are released from each increment of UO_2 as it reaches 4000°F ."

Other conditions remain the same.

To the best of my knowledge and belief, the information contained herein is accurate.

GENERAL ELECTRIC COMPANY
ATOMIC POWER EQUIPMENT DEPARTMENT

George White (Signed 3/24/61)

George White
General Manager

James W. Wilder

Secretary

Subscribed and sworn to before me this
____ day of March, 1961.

Notary Public

Public in and for the County
of Alameda, State of California.

My commission expires September 5, 1964

END

DATE FILMED

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