2004

Search of Problems for Improving the Failed Fuel Location System

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150

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Abstract

Identification criteria of the failed fuel was reviewed to solve the problems of failed fuel location system in Wolsong Unit-2 reactors. As a result of the review, it was confirmed that the existing discrimination ratio of identifying the failed fuels could not be applied directly to analyze the data acquired from delayed neutron measurement because of the flow rate differences among the sampling lines. Therefore, correction factors to compensate the differences will be employed in analyzing the data.

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(GFP)

(HPGe detector)   .

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1. CANDU- 6   Loop   .

2   " 2N channel" /" Figure-of-8"   ,
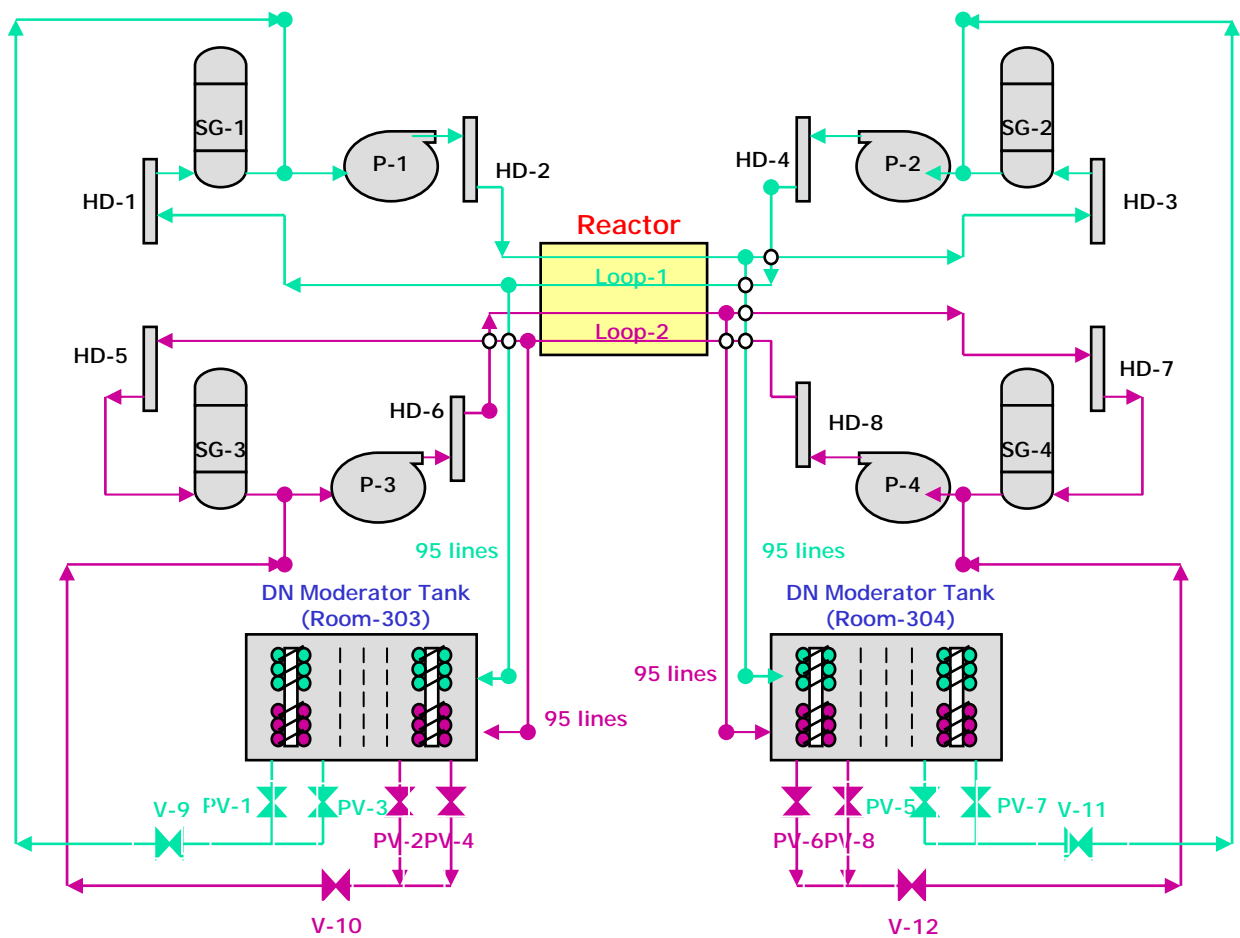   .

-                    Loop-Half   :

$$S' = \frac{\lambda R}{F}\left(1 + \frac{r}{N}\frac{1}{1-r}\right)$$

       , R   , F
     , r   , N
     .

                                        .

$$S_A = \frac{\lambda R}{F}\left(\frac{r}{N}\frac{1}{1-r}\right)$$

-                    Loop-Half   :

$$S_B = \frac{\lambda R}{F}\left(\frac{r^{1/2}}{N}\frac{1}{1-r}\right)$$

-   (S)
(S')   (discrimination ratio : DR)   .

$$DR = \frac{S'}{S} = 1 + \frac{N}{r}(1-r)$$

            Loop-Half   Loop-Half
                              .

$$\frac{S_B}{S_A} = \frac{1}{r^{1/2}} > 1$$

                  AECL   (86-63105-DM-001)   ,
        (DR)   1.3
      .   2   1.1
   3   1.5   2
                        .

Loop-Half A

"N" channels

X

D

Loop-Half B

"N" channels

2. "2N Channel"/"Figure- of- 8 Loop   ,   .

III.

(F)   .

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,   DN   (sampling line)

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DN

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DN   ,

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IV.