SKOYEN EXHIBIT 17

NUREG-1765

Basis Document for Large Early Release Frequency (LERF) Significance Determination Process (SDP)

Inspection Findings that May Affect LERF

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If the breach in the drywell pressure boundary results in a leakage[2] to the environment greater than 200 x L_a it can constitute a large early release. Drywell sprays, if available, reduce the amount of the release. Data generated in the IPE program and reported in published PRAs suggests that for BWRs with Mark I containments, on average, about one-third of the core damage frequency consists of early containment failure sequences and about a third of the early containment failure sequences are large releases. Hence on average, about 0.1 of the core damage frequency in BWRs with Mark I containments constitutes LERF. Thus if a finding implies the existence of a breach in the drywell pressure boundary that would result in a drywell leakage rate > 200 x L_a the large release probability of 0.1 increases essentially to 1.0. The conversion factor for Type B findings is, therefore, approximately (1.0-0.1) = 0.9 for findings of this type. This assumption neglects the effect of pool scrubbing for those sequences in which the in-vessel release passes through the suppression pool. The risk significance can be determined by using the relationship given in Section 2.3 and assuming a total CDF of 10^{-5}/ry for BWRs:

ΔLERF = 0.9 x 10^{-5} x (multiplier based on duration of degraded condition)

Using the multipliers given in Section 2.3 for each of the three (degraded condition) durations the following three ΔLERFs and the corresponding risk significance categories are obtained:

Duration	ΔLERF	Significance Category
> 30 days	9 x10^{-6}	yellow
30–3 days	9 x10^{-7}	white
< 3 days	9 x10^{-8}	green

If a finding identifies a degraded condition that involves a breach of the drywell pressure boundary that can potentially result in a leakage rate in excess of 200 x L_a and the duration of the degraded condition is also determined, one of the significance categories given above can be assigned to the finding.

2 Several studies, including NUREG/CR-4330, "Review of Light Water Reactor Regulatory Requirements," NUREG-1493, "Performance-Based Containment Leak-Test Program," and NUREG/CR-6418, "Risk Importance of Containment and Related ESF System Performance Requirements," have been performed to determine the risk significance of various levels of containment leakage. While the results vary by plant and containment type, a containment leak rate of about 100 volume percent per day appears to constitute an approximate threshold beyond which the release may become significant to LERF. Design basis leakage from containment is determined by regulatory requirements to assure the containment leakage will be below the maximum allowable leak rate (denoted as L_a) set by Title 10 of the *Code of Federal Regulations* Part 100 dose limits that is incorporated in the plant technical specifications. Typical values of L_a are 0.1 containment volume percent per day for PWRs and 0.5 volume percent per day for Mark I and Mark II BWRs, and 0.2 volume percent per day for Mark III BWRs. Thus a LERF significant leakage rate from containment would be a rate greater than or equal to about 1000 L_a for PWRs, 200 L_a for Mark I and II BWRs, and 500 L_a for Mark III BWRs. The 100 volume percent per day leakage rate is approximately equivalent to a hole size in containment of 2.5 – 3 inches in diameter for PWRs with large dry containments, 2 inches for PWRs with ice condenser containments, 1 inch for BWRs with Mark I and II containments, and 2.5 inches for BWRs with Mark III containments (Palla, 2001).