# NRC Question Response Form

Request Number: 19 Status:

Requested By *(Inspector name)*: Date Requested:
Question / Document Request: (Q) D *(circle one)* System:
Detailed Question or Request:

**Page 26 of EC 16275 describes how the driving force for pipe whip is reduced as the cross-sectional flow area of the pipe decreases at the plastic hinge. If the pipe is pressurized, the cross sectional flow area might not decrease as much. How would the results of case 5 change if we did not credit this decrease in cross-sectional area?**

Initiated By *(individual taking the request)*: Ritter

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Assigned To (Person responding to request): Date Assigned:

**CAP / Work Order Issued? Yes (No)** *(circle one)* Number:_____

Response (include a list of documents provided):

The fixed boundary condition employed on the fixed end of the whipping pipe requires that the whipping pipe buckles to form a plastic hinge in order to displace significantly. It is not anticipated that the magnitude of the pressure force inside the whipping pipe is sufficient to have any appreciable effect to counteract the buckling or kinking of the whipping pipe. However, in the event this did occur, the overall effect would be a reduction in the velocity and energy of the whipping pipe as whipping pipe would have to have a longer smoother bend radius to avoid kinking and would impact much less energy to the target pipe.

A preliminary conservative case 5 run was made that did not credit the reduction in cross-sectional area at the plastic hinge which resulted in a breech of the target pipe that exceeded the acceptance criteria. As a result some of the conservatism was removed by implementing a force-time history function in the model. It is important to point out that the cross-sectional area reduction of the whipping pipe did occur in the preliminary run but the impact upon blowdown force was ignored.

**Is this an equipment issue that affects plant operability? ☐ Yes ☒ No**

**If yes, contact the Shift Manager immediately.** _____

**Date/Contacted By**

Completed By: AES/Dave Degrush Date Completed: 7/15/10

Peer / Tech Review / Validation By: [signature] Date Completed: 7/16/10

Team Leader / Supervisor Review / Approval: Sean Ford Date Completed: 7/16/10

**Additional Info Attached? Yes / (No) [forward a copy to Regulatory Affairs]**

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## Reviewer Verification Guidance

- Data Requests:
  - Is the information provided complete? Was any material removed from the information provided?
  - Is the information provided correct? Was the preparer of the response a subject matter expert?
- Information Requests:
  - Does the response answer the question being asked? Is the response on topic and clear?
  - Are inputs and assumptions appropriately validated?
  - If there is an embedded calculation, is the math correct?
  - Is the response well formulated? Was enough work put into the response?
  - Does the response reflect a differing professional opinion between the preparer and the inspector? Is the response professional in tone? Is the response argumentative?
  - Is there a condition adverse to quality? Has a CAP been initiated?