Barron, Robert B SAJ

From: Barron, Robert B SAJ
Sent: Monday, August 08, 2011 12:07 PM
To: 'Daniel Pagan'
Cc: Collazo, Osvaldo SAJ
Subject: Questions regarding LNG Barge and Buoy (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Danny, here are my questions at this point of my review of the LNG Barge and Buoy alternative.

1. For this question, I am referencing Table 2 (Evaluation of Alternatives using Rating and Weight) in Attachment 2 (Alternatives Analysis) of BCPeabody's letter February 24th and the associated narrative at pages 16 to 17. The following are my observations on the subset of criteria related to environmental effects. If my observations hold true, the Buoys would appear to be more favorable environmentally then the Terrestial. Do you have any information or comments you want share regarding my observations?

a. "Bodies of Water". The narrative states Buoy is unfavorable (and in the matrix is terresial and buoy is scored the same), however the Buoy only has a 5-8km single ocean crossing that is fewer then the numerous stream crossings of the terrestrial route.

b. "Endangered Species". The narrative states Buoy is unfavorable (and in the matrix is terresial and buoy is scored the same), however the Buoy would have fewer number of species and shorter length of habitat.

c. "Impacts to Jurisdictional Areas". The narrative states Buoy is unfavorable (and in the matrix is terresial and buoy is scored the same), however the Buoy has a much shorter length/area of impact then the terrestrial.

f. "Corals". The narrative and scoring correctly states is unfavorable, noting the designated critical habitat for certain of the corals and that studies would have to be done. I observe NOAA's benthic mapping suggests routes may be available to avoid known coral. However, the addition of some coral species may be offset by the larger number of terrestrial species.

d. "Water Quality" and "Aquatic Resources". The narrative correctly states the concern for unfavorable effects of turbidity plumes during placement of the buoy and pipe.

e. "Essential Fish Habitat". The narrative states the Buoy is unfavorable due to withdrawal of cooling and ballast water. However, would this be a problem with 200+/- fathoms of water?

2. Referencing Table 2 again, the following are my observations on the subset of those criteria that describe constraints on construction/operation of the Buoy system. Do you have any information or comments on my observations?

a. "Zoning" and "Land Use". The narrative for the Buoy stated is incompatible. The DIA-F in Section 4.3 states for all three powerplants there is no available space for the receiving terminal, which is 2,500 square meters (0.6 acres). Can you elaborate on how you reached these conclusions? From aerial imagery (and I recognize these are from 2009), I observe empty and/or agricultural land near the Combalache plant and that the Palo Seco and San Juan plants are within industrial areas that may have inactive land or active operations

that could be relocated. Can you provide any newer or more detailed information that you used for your conclusion?

b. "Impacts to transportation and traffic" is stated as unfavorable due to restriction to navigation near the buoy. I find it difficult to understand how a 500 meter zone would pose much of a constraint 5-8 km off the coast.

c. "Ease of Access" is stated as unfavorable for emergency workers travelling to the tanker, however I believe this also could equally be said for travelling by road to remote sections of the pipeline.

d. "Noise Impact" is described as unfavorable effects from the underwater sound generated during the regasification. I cannot with information available to me at this point judge the degree of concern.

e. "Cost". The narrative states the Buoy system would require signing a 20 year contract of $70 to $80 million dollars a year for a total $1.6 billion dollars and the score is the same as the terrestrial route ("less than 1 billion") which may be a scribal error. The DIA-F at Section 4.3 states this is for the design, construction and operation of the Buoy system. Attachment 2 of BCPeabody's letter of February 24th notes the design, construction and permitting cost of the pipeline is $447 million dollars. Do you have information that compares the same suite of costs for the alternatives (that is, both include the construction, maintenance and operation costs exclusive of the cost of gas) for delivery of approximately 93 scf/day (reference your letter of March 7th)?

3. Regarding your letter of January 28, 2011, in your response regarding FSRU's, you state "The conditions suitable for an FSRU have not been identified in the region, . . " Can you explain that sentence?

4. Regarding your letter of January 28, 3011, in your response regarding FSRU's, you conclude "..the newness of offshore LNG introduces new complexities, costs, and questions about feasibility." I find earlier in the narrative the statement ". . no FSRU has been constructed and operated in North America." and it also refers to wind and current conditions. Section 4.3.2 and .3 of the DIA-F refers to ". . the energy of the Atlantic Ocean is significant which possibly would require specialized construction techniques for the mono-bouy system . . " Do you have additional information that elaborates on these statements regarding feasibility? For example, on the intranet I found two installations that appear to be meet the definition of FSRUs, though called a different name by Excelerate Energy, off the coasts of Louisiana and Massachusetts.

5. The BCPeabody letter of June 2, 2011, refers to LSRUs and FSRUs. From my quick look on the internet there are multiple names and variations in technologies to provide off-shore re-gasification, but I am interpreting your use of the term "LSRU" as a fixed platform/buoy installation while your "FSRU" is for the buoy mounted on the seafloor. Is this correct or can you clarify?

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