

CHAIRMAN Resource

From: Tom Gurdziel <tgurdziel@twcny.rr.com>
Sent: Wednesday, October 18, 2017 6:43 PM
To: techols@psc.state.ga.us
Cc: ESTRONSKI@aol.com; Bridget Frymire; Hannah, Roger; CHAIRMAN Resource; judys@enr.com
Subject: [External_Sender] Thoughts for Vogtle Unit 3 and Unit 4
Attachments: 56 Vogtle Comments.docx

Good morning Commissioner Tim Echols,

I have prepared 57 comments with the hope that at least some will be useful during the Vogtle Unit 3 and Unit 4 construction effort. All these comments are based on my construction and nuclear operating experience at employments listed. (I am making no comments based on my employment as an inspector in the field of soil engineering, (2 firms), or as a short term contract worker at a dual fuel, combined cycle gas turbine plant, which I have not listed.)

You need to allow for my possibly inaccurate memory or even incorrect conclusions when reading these words. The order is 57 comments followed by 57 additional thoughts where I felt them to be helpful.

Thank you,

Tom Gurdziel
Southern Company stockholder



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These comments and questions are not in any special order. Their number is solely for convenience in identification.

1. Is there a site suggestion box or some way for ideas to be passed to upper levels of management?
2. Is the Vogtle "Standard Design" 100% complete? When?
3. Is there a design engineering freeze?
4. Is all work in containment on a 2 shift basis?
5. Why is the reactor vessel so light? At 280 tons it is much lighter than the Nine Mile Point, Unit 2 reactor, which I remember to be about 860 tons. I think both have approximately the same electrical output.
6. Why wasn't the first Unit 3 steam generator set in place earlier when the containment was lower?
7. Do you still need that very large crane? What about 2 crane lifts?
8. You need to close up the building faster, leaving just an end open for access.
9. Need quick decisions. Spending more time making a decision does not ensure a better decision.
10. Need to accept that mistakes will occur. When failure occurs, need to identify it quickly then try to achieve success another way.
11. Need some competition.
12. Need a "hatchet man" once in a while.
13. As best I can tell, there is too little work done in the containments.
14. How much rework is being done on the modules: how much was expected?
15. Are salt pills or other remedies for the heat readily accessible?
16. What % complete were modules shipped in from off-site assembly? What % complete had been desired/expected and used for scheduling construction?
17. Hire those Santee Cooper people who did identify construction problems.

18. The whole idea of “intellectual property” as applied to a power plant you already bought needs to be very seriously challenged.
19. Consider using a method of running meetings taught by the company “LiquidHub” to their employees studying “Agile Development” of computer programs/systems. (If you are not responsible for solving the problem at hand, in a meeting, your mouth is SHUT.)
20. Do NOT use consensus management. (Kemper County is a good example.)
21. Consider a follow-on gas turbine to pay for SAFSTOR time.
22. Delay construction, (mothball), one plant for at least 2 years. (Cash flow is the concern here.)
23. Comment on 2 types of people: regulated (not merchant) utility management and construction management.
24. Too slow with concrete. Probably should be just about done by now.
25. Work areas must be accessible to multiple crafts at the same time.
26. Why is full plywood being used for scaffolding instead of tie wire tied planks?
27. How often do you check for “ghosts” on the payroll? (Check “brass”)
28. Need succession planning for T. Fanning. (Not easy)
29. Has consideration been given to extending the Emergency Plan radius?
30. How much is Westinghouse worth? How much, presently, is it expected that “intellectual property” rights will cost Southern? Can we buy Westinghouse and save money?
31. What is the big deal about E-P-C? Especially as exhibited by Westinghouse, why is it so important to have Engineering, Procurement, AND Construction done by the same organization? In fact, it would appear that loyalty to the company might delay or hide problems that need quick solution.
32. How much equipment is no longer needed, but presently manned anyway?
33. How far is it between when workers start getting paid and where they actually do their work?

34. I saw a picture of Ironworkers with a hook onto rebar from their belt and two more attachments for anti-fall protection. Are these all needed? How do you get horizontal reinforcing rods to them efficiently?
35. Is a rainy day a 2 hour pay day?
36. Do welders get a guaranteed 40 hours of pay each week?
37. Do you use compressed air “surge” tanks?
38. How often do you do welding lead roll up?
39. Are welding machines prepositioned for all craft use? Are there enough?
40. Do we need to make payments to the fund for decommissioning yet?
41. I do not like rigging without lateral support. (I think the Easter Sunday fatal accident at ANO is an example.)
42. Is the concrete batch plant of adequate capacity?
43. Toshiba will not make any payment. A response strategy is necessary.
44. Are there any “rock squeeze” problems on building foundations?
45. Is any blasting being done on site?
46. Is equipment already set in place being properly maintained, such as with inert gas?
47. Is there an education program for Unit 3 and Unit 4 operators?
48. Do they, or have they, plumbed up structural steel?
49. Are jobsite safety costs in line with those estimated?
50. Do they load test any rigging equipment?
51. Need an attitude of keep trying until successful (and may already have it.)
52. Set second steam generator in Unit 3.
53. The lack of surety bond coverage for this project probably was a very early alarm of expected trouble to come, if you had knowledge of their function.

54. Does any craft have a work week of Saturday to Wednesday, with Thursday and Friday as premium pay days?
55. Is there any warranty that the plant will work as expected when built as designed?
56. Can you do informational x-rays when welding thick pipe together? (The reference is the Nine Mile Point, Unit I reactor external recirculation piping replacement.)
57. Finally, as we all sit in awe over the classification of the AP1000 as a “first of a kind”, could I ask this: how many big (heavy) construction projects are NOT “first of a kind”?

Comments for Items above

1. I think such a capability existed at Three Mile Island during construction of Unit 2 though I am not sure I had heard of it being used.

At Vogtle, I am dissatisfied with construction progress. It would be comforting to tell myself something like this: things there have been poorly (you fill in the words), however, conscientious workers there would have identified present and possible upcoming problems, if such an avenue existed. But even with no formal pathway, didn't any of 5000 workers ever speak up?

2. I don't think the Vogtle AP1000 design is 100% finished yet. Staffing up to do work you don't have is very costly. Never the less, we used this argument at Three mile Island to get final approval on something so that a crew (or more) of presently employed and assigned to productive work Ironworkers would be able to place reinforcing steel, (rebar), in a week or two when they would be done otherwise.

This did work, (once anyway), because the contractor, United Engineers & Constructors, (UE&C), was not part of the company doing the design, (which was Burns & Roe, Inc.). In other words, it worked because we Did Not Have an E-P-C arrangement. (This is unlike Vogtle earlier with Westinghouse.)

3. If the owner or constructor does not declare a design engineering freeze at some point, consider this an excellent way to Waste both time and money of the people eventually paying the bill (of higher electricity rates.)

What you do is this: tell the design engineering company that in ____ (maybe 6) weeks, the design is being frozen. So get any changes absolutely felt to be necessary (by the engineering company) done, approved, and issued for construction OR get those changes made later, after the plant has gone commercial.

This is powerful because, if the change is done during construction, electricity customers pay for it as an accepted capital cost which provides a good return on investment to the owners for the life of the plant (or until depreciated.) Otherwise, the cost of the change comes out of that years' operating budget as an expense to the regulated utility plant owners.

Replacing the originally installed main steam line (ball) isolation valves at Nine Mile Point, Unit 2 would be an excellent example (of the NY PSC putting their foot down.)

4. You need to be working the maximum amount of hours each week on the most important area. This would be the containment area. You need 2 long (or 3) shifts a day, AND you don't want anyone continuing, (turning over), work from a previous shift. (Too much rework that way.) Each shift has work it alone is assigned to complete.

How many days a week is the containment being worked? List for each of the seven days of the week, what craft or crafts are working there.

5. Have we reduced the reactor vessel factor of safety to save weight? What does this do to estimated service life? Is it 40 years, 60 years, 37 years, or less? How about similar weight comparisons for the steam generators?
6. You should have set both steam generators at the same time, then start completely separate crews of Boilermakers/Pipe fitters (I don't know which) to work beginning at the same time, (date). One could be night shift, one could be day shift. That way you get some competition and you are not justifying keeping the expensive heavy lift crane on site longer than it is needed.

A good example of setting all, (both), steam generators at the same time is Three Mile Island, Unit 2. (This happened just before I got there.)

7. A single giant crane is not the only way to lift stuff. Two smaller cranes can be used to make such lifts.

Price using two cranes for any remaining heavy lifts, if advantageous, make the change and sell the big crane.

8. You can leave some big access holes in the siding that can be closed in later. Close in the rest of the building(s). You bring in the crew(s). (Ironworkers were used at Roseton, NY.) They can work off of hanging scaffolds. When that is done they get paid off. Later, when it is time to completely close in the building(s), you bring them back.

The Roseton, NY fossil fuel powerplants were an example of working off of hanging scaffolding.

9. Decision making is only the first step. Do the work. If all does not turn out well, make another decision and another attempt at success.

10. Self-explanatory

11. Reduces the appearance on the job site of “prima donnas”.

A good example was the use of two structural steel erecting crews (of Ironworkers) and 2 big cranes for two boiler houses, both done at the same time, at the Roseton, NY plants.

12. Is everyone following their contract requirements? A 10 minute early quit for pipefitters meant getting fired one day at Three Mile Island when the “hatchet man” was visiting. Naturally he had an excellent knowledge of all those contract conditions. (Then we put in a call for 7 replacement pipefitters for the next day. About ½ of the replacements were the ones just fired!)

13. Concrete should be a lot higher on the Unit 3 containment building.

14. Was a problem, the failure to set and apply more restrictive acceptance requirements?

15. Self-explanatory

16. How much more did it cost to do module work on the jobsite that could have been specified to be done at the offsite erection/assembly site?

Is this a backcharge to Westinghouse?

17. Self-explanatory

18. I just can't accept the idea that after you pay for the entire plant, now you also have to pay for the thinking that went into it. Well, maybe I could accept a payment for “intellectual property” if Georgia Power was going to steal the design and start selling the identical plant to others under the Georgia Power name. Otherwise, I think it is time for some serious rethinking of the concept.

19. Call “LiquidHub” and have them explain it to you. The advantage I see is that it should mainly eliminate those who show up at meetings and contribute road blocks to progress with their observations and comments.

20. Self-explanatory

21. This idea is, perhaps, a little early. I have suggested before, (Vermont Yankee, Indian Point), that a small gas turbine plant(s) be constructed adjacent to the existing switchyard to earn money to pay for the long term decommissioned site costs because the U.S. government has been unable to provide a promised permanent location for spent fuel.

22. There is also another consideration. You cut risk. If these AP1000s cannot be built and used, you haven't spent as much.

23. On a construction job, you need people with construction experience and you don't need, (can't afford), a management layer without that experience. (A liberal arts degree US Navy officer leading a Mobil Construction Battalion construction company at Da Nang East is one example.)

24. Self-explanatory

25. They, (their foremen), can work out people working over their head better than you can.

26. Self-explanatory

27. Self-explanatory

28. A second in command won't work. (Anyway, it didn't at Roseton.) The way to handle this problem may be by using some intermediary. When the need might arise, the intermediary will supply necessary ideas and contacts and methods to the then designated replacement.

29. Self-explanatory

30. Self-explanatory

31. That approval of drawings and release of material for Ironworkers, (Item 2). At Three Mile is a good example.

32. Self-explanatory

33. Is this a cost that has been overlooked in planning/budgets?

34. Self-explanatory

35. Self-explanatory

36. Self-explanatory

37. Use them when bolting up structural steel or waste time waiting for air pressure to recover.

The example is Roseton, N.Y.

38. This frees up welding machines because, otherwise, leads go all over the place.

39. Self-explanatory

40. Self-explanatory

41. Self-explanatory when using trolley equipment.

42. Self-explanatory

43. My opinion.

44. Probably not if on compacted fill.

45. Self-explanatory

46. Self-explanatory

47. Self-explanatory

48. You don't just set it in place then bolt it up.

49. Self-explanatory

50. Self-explanatory

51. Self-explanatory.

52. Get moving. Can both the unit 4 steam generators be set now?

53. Was any refused surety bond coverage reported to investors?

54. (Looking for wasted or lost time here.)

55. It seems fair to me that, if they expect payment for intellectual property, they will experience, (accept), a cost if the thing does not work.

56. You just finished welding some 26 inch diameter thick wall pipe. The necessary x-ray image of the weld shows a problem just below the outer surface. You remove the good weld above the defect and repair it. Then you get another x-ray to show it is okay.

Suppose, though, the defect is way down in the weld. That's a lot of grinding work necessary to get down to the defect, and a lot of replacement welding above, once the defect is repaired. So, instead, you call for a first x-ray to be done when you are about $\frac{1}{4}$ finished. Now, if there is a defect, you need to remove (and ultimately replace) a lot less weld.

Trouble was, in the 1980s, that official x-ray resulted in a Reject Tag and a hold on the work. So, to avoid the attendant time loss, it was possible to do "information only" x-rays. These were not official and identification of defects did not result in a stop to the work. (The advantage here was the ability to immediately take action to repair the defect.) Realize that a final, official x-ray would still be required. However, you already had evidence from the $\frac{1}{4}$ (depth) and the $\frac{3}{4}$ (depth) x-rays that at least those parts of the weld were acceptable, (having been already repaired where necessary).

Are informational x-rays still legal? If so, are they being used? (The reference is Newport News Industrial work at Nine Mile Point, Unit 1. (One).

57. The answer is "none."

Order of Construction Jobs

Da Nang East, Vietnam USN MCB SEVEN military construction

Dong Ha Combat Base, Vietnam USN MCB SEVEN military construction

Roseton, N.Y. Burns & Roe Construction Corp., 2 unit powerplant on the Hudson River, originally fueled with oil. (I learned rigging from the union Ironworker Superintendent.)

Three Mile Island, Unit 2, United Engineers & Constructors, nuclear fueled Pressurized Water Reactor, (the one that later had the accident). I was the area engineer for most of the construction of the Unit 2 containment.

Nine Mile Point, Unit 2, Stone & Webster, nuclear fueled Boiling Water Reactor on Lake Ontario. Rigging Engineer

Nuclear Operations

Nine Mile Point, Unit I, (This is not Unit 2 mentioned above.) Niagara Mohawk Power Corporation, nuclear fueled Boiling Water Reactor. I earned a USNRC-issued, unrestricted Senior Reactor Operator license and worked on an operating shift as the Shift Technical Advisor. When we replaced all of the external piping from the reactor pressure vessel to the five, external reactor recirculating water pumps because of Intergranular Stress Corrosion Cracking problems, I was one of the Drywell Coordinators. The piping replacement took over a year, during which we worked 7-12s plus turnover. I also personally moved nuclear fuel into and out of the reactor vessel.

Tom Gurdziel

Southern Company stockholder

(I am not real happy with the formatting above, but don't want to spend any more time trying to fix it, since I think it is readable as is.)