

From: Catherine McNicoll <CatherineMcNicoll@scstatehouse.gov>
To: Danny Varat <DannyVarat@scstatehouse.gov>
Date: 10/10/2017 3:31:10 PM
Subject: FW: Saving the Summer Nuclear Reactor Project

Thoughts?

Best Regards,
Catherine McNicoll
Director of Legal & Legislative Affairs
Lieutenant Governor's Office
CatherineMcNicoll@SCStatehouse.gov
803-734-5292 (phone)

From: Donald Gross [mailto:dgross@acustrategicpartners.com]
Sent: Tuesday, October 10, 2017 3:06 PM
To: Catherine McNicoll
Subject: Saving the Summer Nuclear Reactor Project

Dear Lieutenant Governor Bryant,

I hope all is well with you. About a month ago, two of my colleagues at ACU briefed Governor McMaster's staff on ACU's proposal to fully fund and complete construction of the Summer 2 and 3 reactors - without burdening South Carolina's ratepayers or requiring a federal bailout. As a matter of fairness, we would like to share with you and your staff the materials below regarding our proposal.

If our proposal is accepted, we will be able recall the Summer workforce by the end of this year while my colleague, David Stinson, supervises a six to nine month review of the engineering design before restarting construction of the reactors. Not long ago, Dave oversaw the construction, startup and operation of the Watts Bar 2 nuclear plant for TVA.

I'm including below:

- ACU's proposal of August 2nd to Kevin Marsh to establish a JV with SCANA and Santee Cooper for completing the project
- An email from Jim Hamel, strategic planning and defense market director of Curtiss-Wright nuclear, one of ACU's industrial partners, describing Curtiss-Wright's commitment to the project
- Memoranda from Dave Stinson, director of ACU's reactor construction group, laying out a strategy for restarting construction

In closing, I'd like to mention that the ACU project is designed to give Mr. Trump a big boost - by saving thousands of American nuclear jobs and by significantly strengthening the US position in the Middle East. This would be especially valuable following Sen. Corker's recent criticism of the president.

If you and your staff would like a full briefing by our management team on the ACU proposal or have any questions, please let me know.

Best regards,

Don Gross

Donald Gross

Counsel

ACU Strategic Partners

From: Alex Copson

Sent: Wednesday, August 2, 2017 4:48 PM

To: 'kmarsh@scana.com' <kmarsh@scana.com>; 'sbyrne@scana.com' <sbyrne@scana.com>

Cc: Thomas Egan (thomas.egan@bakermckenzie.com) <thomas.egan@bakermckenzie.com>

Subject: FW: Summer 2 & 3 Shutdown - ACU/SCANA Joint Venture Proposal

Kevin / Steve -

With the support of the Administration, ACU expects it will have the resources to fund the full completion of your VC Summer project without imposing any burden on the ratepayer, your stockholders or the US taxpayer. We calculate that the project will require a further \$10 Billion and have included that in our part 1 funding model. We have built in the same dollar value to cover the Southern Co situation in GA if required by them. There may be compelling reasons under the prevailing circumstances to combine both distressed projects under a single new funding structure and venture.

Our funding sources and unique mechanism allows ACU to justify supporting high-risk but important projects such as Summer and Vogtle since the investment is underwritten by other tangible values generated for the funders by the broader ACU project.

In the absence of an alternative funding solution which is committed to completing the units and as a matter of national interest in maintaining a credible US nuclear energy capability to support inevitable domestic and international demands – we propose the following basics, notwithstanding regulatory issues:

- A) ACU sources \$10 Billion in upfront capital for a 50/50 project completion joint venture with SCANA/Santee Cooper ("SC").
- B) SCANA/SC will determine the site and project post-shutdown values (the "X factor").
- C) SCANA/SC will have no further obligation to fund the project.
- D) Post completion net operating cost revenues distributed pro rata after recovery by SCANA/SC of the X factor noted above.
- E) SCANA/SC will remain the project operator.

In effect, the JV is there to fund and oversee the completion of the units and be a profit split mechanism – not necessarily an ownership vehicle.

I've deliberately kept this proposal as basic as possible with the knowledge that if we decide to go forward, we have more than sufficient expertise on both sides to make this happen. I've also tried to make this proposal to you and Santee Cooper as generous as possible to expedite matters, as the sums involved in context to the larger ACU project are relatively insignificant.

Hope we can discuss soon, as we would like to include this in our pitch to the Administration since they should have an equal if not greater interest in saving the project(s) than we do.

AC.

Alex Copson

Managing Director

ACU Strategic Partners LLC

Begin forwarded message:

From: Hamel, James
Sent: Wednesday, September 06, 2017 5:51 PM
To: Trey Walker (twalker@governor.sc.gov) <twalker@governor.sc.gov>
Cc: alex copson <acopson@acustrategicpartners.com>; Gary M. Mignogna (Gary.Mignogna@areva.com) <Gary.Mignogna@areva.com>; Wolski, Gary <GWolski@curtisswright.com>; David Stinson (dstinson@acustrategicpartners.com) <dstinson@acustrategicpartners.com>; Jan Willem Henkelman <Jan.Willem.Henkelman@mammoet.com>
Subject: ACU IPG Project

Mr. Walker – I want to provide you with Curtiss-Wright's perspective with respect to the ACU IPG project prior to the meeting between Mr. Alex Copson and Gov. McMaster.

Curtiss-Wright is a key member of the dwindling US commercial nuclear power industrial base.

- Our Electrical-Mechanical Division (EMD) was part of the Westinghouse Electric Corporation prior to Curtiss-Wright's acquisition in 2002. EMD has designed and manufactured every Reactor Coolant Pump (RCP) for Westinghouse Nuclear Power Plants (NPPs) throughout the world, including the RCPs for the AP1000 NPPs under construction in South Carolina and Georgia and in China.
- Our Nuclear Group provide products, support and services to all of the operating NPPs in the United states and many throughout the world.

We view with great concern the developments relating to Toshiba Westinghouse's Chapter 11 bankruptcy filing, and the subsequent termination of the SCANA/Santee Cooper V.C. Summer nuclear project, along with the financial challenges of Southern Company's Vogtle nuclear project. Without some form of intervention to salvage these NPP projects we believe that plans for any future NPP construction projects in the US are dead. We also are concerned that the US will lose its preeminence in the design of NPPs and their accompanying technology and that foreign companies will assume that role.

Curtiss-Wright first engaged with Mr. Copson and ACU in October of 2014. Initially they contacted us because of our background in nuclear fuel enrichment centrifuges, but they encouraged us to join the project when they realized the depth of our engagement in the total nuclear industrial base and our technical capabilities. We have been participating as one of ACU's partners since that time.

After evaluating the overall ACU IPG project we have come to several conclusions:

- There are very few strategies that have been presented in public that provide a mechanism to provide stability and economic opportunity in the Middle East. This project provides a mechanism that can work. By using nuclear power as the currency for the project, and the US, Russia, France and Israel as the participating countries along with the GCC member states, the long term opportunity for success and stability are maximized.
- By completing the four Westinghouse AP1000 reactors in South Carolina and Georgia the project saves tens of thousands of US jobs either currently lost or now at risk – without requiring a federal bailout or US Government or state financial guarantees

- Through constructing new energy infrastructure in South Carolina, Virginia and other states, the project revitalizes the moribund US nuclear industry – generating about \$150 billion in exports over 15 to 20 years and creating more than 10,000 shovel-ready jobs
- The project provides a unique and compelling industrial basis for realigning Russian interests away from Iran and improving US-Russia relations
- The team of international companies that Mr. Copson and ACU has assembled, the “Super Consortium”, includes a high-level security package supplied by Israeli Aerospace Industries, an arm of Israel’s Ministry of Defense – including a much needed regional satellite surveillance system – investing billions of dollars in Israel over the life of the project
- Through ACU’s investment and acquisitions in three distinct Ukrainian enterprises - facilitating Ukraine’s participation in the ACU Super Consortium – the project creates greater flexibility for negotiating changes in the international sanctions regime regarding Russia
- The project stabilizes Egypt through a massive civil works construction program and expedites the Gulf States’ normalization of relations with Israel – which are critical to the Trump administration’s goal of achieving a broad Middle East peace agreement
- The project’s secure fuel in/spent fuel out service ensures that spent fuel containing plutonium, including reactor waste generated by the UAE nuclear energy program, is removed from the region – a critical requirement of Israel

Curtiss-Wright’s role in the near term phases of the IPG project is twofold.

- Our Nuclear Group will lead the effort to upgrade and stabilize the existing NPPs in the Ukraine that are in a terrible state of maintenance and sorely in need of modernization. These plants are an accident waiting to happen.
- Our EMD business will manufacture the RCPs for all of the IPG NPPs. With 45 NPPs planned that results in requirements for 180 RCPs. Since our existing facility in western Pennsylvania is operating near capacity we will need to build a new facility to manufacture these RCPs. We have for a number of years been looking for a location to build a new manufacturing facility, and the most likely candidate is Charleston, SC. The history of manufacturing and the old Charleston Naval Shipyard provides the background and experienced work force needed for such a new facility, and the location at a deep water port is critical. This plant will employ more than 200 engineers and highly skilled factory workers over more than 15 years just to accomplish the ACU IPG workload.

In summary, Curtiss-Wright believes that this project achieves the dual goals of providing a significant foreign policy initiative to stabilize the Middle East using GCC funding while creating or sustaining tens of thousands domestic jobs in the US nuclear power industry. South Carolina stands to gain significantly by supporting the project strongly, and will be foundational in the re-establishment of a strong US nuclear power industry for decades to come.

If you have any questions please don’t hesitate to call or contact me.

Sincerely,

Jim

Jim Hamel

Strategic Planning & Defense Market Director

Electro-Mechanical Systems

Curtiss-Wright Corporation

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* * *

Begin forwarded message:

From: David Stinson <dstinson@acustrategicpartners.com>

Date: August 28, 2017 at 1:09:37 PM EDT

To: Alex Copson

Subject: Restarting Summer / Recalling the Workforce

Alex,

I would recommend the following plan of action immediately after reaching agreement with SCANA / Santee Cooper:

- Safe the site:
 - Ensure all on-going construction and engineering records on-site are identified, evaluated for completion status, schedule impacts identified and remaining work on open paperwork estimated
 - Ensure warehouse standards are being maintained and the equipment is being properly maintained
 - Ensure the plant is being maintained in accordance with industry standards. Loss of control has, in the past, led to much rework as plants start back up
 - Re-engage with the NRC
- Re-establish contracts with the on-site contractors. Special emphasis should be placed on getting the right contract with Westinghouse. If they don't step up, we'll have to replace them with AREVA staff immediately. Either way, we'll bring in AREVA senior management to help in the NSSS review as seconded members of the ACU on-site staff
- Bring back SCANA Operations and Maintenance staff that have been released. They represent a significant investment in training, as well as, an entirely local workforce
- Bring back the professional staff (field engineers, construction management to the foreman level, and about 500 craft). Start with the management and fill in as work is defined.
- Bring back the support staff (security, warehousing, Quality Assurance / Quality Control, Training, Project Controls, etc.). Again, start with the management and fill in as work is defined.

Over the next six months, craft labor can be added back to the site as work packages are developed and material staged. You can start with local craft and then bring in the travelers. Most travelers will not work a straight 40-hour work week site, so you'll need enough backlog to support limited overtime. Typically, the travelers are among the best workers since they're away from home and focused on making money. Most successful sites reward high performing crews with overtime priority. Travelers tend to dominate the high performing crews.

Also, this may be a good time to rethink siting the heavy plant in Charleston rather than Alabama or Virginia. This represents several thousand longterm jobs for SC, but also a reasonably close location for the furloughed craft to work. Since significant engineering work has been done to date by CH2MHill so you may be able to fastback site preparation and initial civil work.

Best regards,

Dave

David Stinson

From: David Stinson

Date: August 4, 2017

To: Alex Copson

Subject: AP1000 in the UK & US

Alex -

I wanted to follow up on an earlier discussion today concerning Westinghouse and the opportunity to place 3 new AP1000s in the UK at Moorside. I have been to the Moorside site, looked at the prevailing infrastructure and British manufacturing capability to support an AP1000 development there. It can be done but logistics, expansion of local manufacturing capability and need to support a 10,000 person construction organization onsite will be challenging. That being said, it's all doable.

However, I would not recommend that you move on Moorside at this time. The obvious points are that the Chinese plants have not gone commercial and the US plants are years behind schedule and final costs are anyone's guess. Westinghouse management is weak and unwilling to talk about or begin to fix the root cause of all of their problems, an incomplete design coupled with weak leadership.

Westinghouse sold SCANA and Southern Company a completely designed plant. They used the fact that the Chinese plants were already under construction to frame this belief. Further, they stated that any construction issues would be identified and resolved in China first and the US would be the beneficiary of this knowledge that would significantly improve the constructability of the US plants. What they never said was that the design was complete enough to get NRC approval, but not ready for release to construction. It was at best a 30% complete design, slightly more than conceptual. History tells us (you can check the Project Management Institute for corroboration) that major complex projects typically see a 120% increase in cost from conceptual estimates to final cost. So for a plant that was sold at an overnight cost of \$4,000 per megawatt, one should expect a final cost of at least \$8,800 per megawatt. That's pretty close to the current estimates.

So, the project was sold as design complete and funded accordingly. In fact, it was NRC license complete, but far from construction ready. What this meant was that the funding to complete the design came from the profits from the original sale of the units and any operating profits that came from the other Westinghouse divisions. This led to reported losses of \$400M in 2013 and the same for 2014. I'm sure losses prior to and after this timeframe were significant, as well.

The design is still not complete. Designs were issued to the field prior to completion in an attempt to get construction milestones completed that were tied to payment milestones. There was never time or courage by management to address the real issue, incomplete design. As an example, the large modules placed by the Chinese did not have equipment or piping installed, effectively negating the positive modular construction effects for both schedule and costs. They were forced to outfit the modules after placement. The US plants did some outfitting in the shops, but design changes caused significant rework in the field that continues to this day.

So, it's a mess. Before I would push to build more AP1000s anywhere in the world, I would do the following:

1. Stop on-going construction work in the US and focus on identifying incomplete work packages in the field, retrieving the packages, as-building the drawings and ultimately, the 3D model, and completing engineering and engineering analysis (piping, structural, flow, etc.) for the previously released packages.
2. Complete the balance of the design of the unit using SmartPlant 3D rather than the 32-year old Plant Design System (PDS) and include small bore piping and conduit to minimize rework in the field.

3. Issue procurement packages to support construction in the field, receive material and stage the material for field release.
4. Complete a work package backlog of at least 6 months of work prior to restarting construction.
5. Conduct a complete material takeoff and re-baseline the project cost and schedule.

This approach would allow the Vogtle and Summer units to be completed in a predictable manner from a cost and schedule perspective.

While the US units are being completed, I would recommend Westinghouse start on an optimization program focused on future plants. The engineers assigned to this effort would take lessons learned from the US and China and incorporate those into the design with an emphasis on ease (simplification) of construction. I would expect to see an expanded containment footprint and major changes to the size and complexity of individual modules. Many are simply too large and bulky.

When the optimization program is completed, material takeoffs should be completed on all drawings issued for construction and used as the basis for the material portion of the cost estimate. Similarly, these drawings will be used to estimate construction costs – labor, construction equipment and schedule. Once, this effort is completed, you will have an estimate you can bank on with a contingency of 50% or less.

Anyway Alex, that's my 2 cents worth based on fixing other people's problems for the past 35 years. Nothing takes the place of honest, experienced leadership and that's lacking on these projects.

Best regards,

Dave

David Stinson

[\(256-647-8038\)](tel:256-647-8038)

Donald Gross

Counsel

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