



# Going Forward: New U.S. Reactor COL's

By Frank S. Tsakeres, NWI



## Nuclear Renaissance – Changes in the Wind?

Changing Directions; Stress the timing... Over the past several quarters, decisions have been making up a mixed landscape of new reactor construction directions, some going forward, some treading water, and some appearances of withdrawal or deferral. While Exelon as not made a firm commitment to build new power reactors, the primary siting selection was announced recently of a Texas 1250 acre plot (between Houston and Corpus Christi in Matagorda County). Previously in March 2007, a site in Clinton, IL was targeted. The change was attributed to favorable tax credits, risk insurance and loan guarantee incentives.

Texas Utilities announced a downward project in July, 2007 of moving from 6 GWe capacity at 3 sites to 2 reactors at 1 site (3.4Gwe). In other Texas news, NRG Energy is planning a COL to add 2 GE ABWRs at South Texas.

Outside of Texas, an NRC official stated that PPL Susquehanna's COL will reference Areva's US EPR advanced PWR design (scheduled for submittal in 2<sup>nd</sup> qtr 2008). PPL has entered into agreement with UniStar Nuclear, a joint venture between Areva and Constellation, and envisions a Constellation fleet of 5 reactors (with 2 being built at current Constellation sites). With PPL, AmerenUE and Alternate Energy Holdings, Inc. (AEHI) and Amarillo Power planned, a total of up to seven 1600 MWe PWRs would be planned for future construction.

In North Carolina, Progress Energy – deferred startup plans (but not COL application) for 2 new proposed reactors at the Harris site for 2 yrs stating that demand is not great enough. This change in direction was cited to be based upon demand-side management program. *Could this be one of the first signs of re-thinking of new reactor construction projects due to an anticipated change in the political landscape (senate/house control) and changing nuclear policy direction?*

However, Progress Energy has asserted that there would be no impact on new reactor construction in Florida (July 2007).

In other parts of Florida, Turkey Point is being considered for siting of FPL Energy's new reactor construction in 2009 (May 2007). To encourage investments, the Florida PSC initiated a new reactor cost recovery to allow utilities to request partial rate recovery in new reactor planning/construction (March 2007).

### Other News

- December 2006 -Alternate Energy Holdings, Inc. (AEHI) announced intent to build ESBWR in Bruneau, Idaho.
- DTE energy announced in February 2007 that it will apply for a COL in late 2008.
- Entergy's Grand Gulf gained Early Site Permit (ESP) – COL expected in November 2007.
- May 2007-NRC endorses

## NWI's Efforts to Support 95-003 Inspections

By Steve Pettinger, Bill McNeill & Karen Pettinger, NWI

In March 2007, prompted by NRC's action to place PVNGS Unit 3 in the fourth column of NRC's Action Matrix, selected APS managers began formulating the company's plans for addressing PVNGS performance issues and meeting NRC and APS expectations for performance improvement. This planning effort included a review of the methods used by other nuclear plants, such as the Perry Nuclear Power Plant and Cooper Nuclear Station, which had conducted assessments and developed improvement plans under circumstances similar to

PVNGS. Importantly, however, the NRC modified IP 95003 in October 2006 to incorporate several elements designed to assess safety culture and to require the conduct of an independent safety culture assessment. PVNGS is the first nuclear plant in the country to undergo a 95003 inspection with NRC's new safety culture guidelines in place. Although originally known at PVNGS as the "95003 Team," based on the related NRC inspection procedure, APS's improvement planning effort was eventually renamed the Improved Performance and Cultural Transformation Project (ImPACT) to reflect its broad scope and its objective to alter the culture at PVNGS and make lasting improvements. Nonetheless, APS's effort is in large part based on IP 95003, despite the procedure being developed primarily for the NRC's use. APS's decision to implement IP 95003 in its entirety resulted in PVNGS developing comprehensive assessment plans to address all of the elements of NRC's inspection procedure and related guidance documents. The charter establishing the ImPACT project acknowledged that PVNGS had not identified, or corrected, the underlying causes of declining performance. PVNGS established various teams to conduct reviews aimed at accurately identifying the

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UniStar's QA topical report/issued safety evaluation.

- June 2007-TVA announced the completion of U2 Watts Bar near Spring City, TN currently is about 61% complete.
- Susquehanna announced in June 2007 that it is taking steps to preserve the option to build new reactor at its Berwick site.
- July 2007—AmerenUE picks UniStar design, U.S. EPR, for COL with Cal-

away being the stated site for AmerenUE's COL.

### Financial Repercussions

- No company or consortium has announced it will actually purchase and build new reactors. Claimed by executives and others that the announcement would lead to a stock decline, companies that have announced interest have not experienced the predicted decline with the majority experiencing positive stock price changes (e.g., from +\$22.74 to -\$1.50 per share change for 12 publicly traded utilities (April

ANS News 2006).

### New Purchases

- FPL Energy was chosen in December 2006 as the winning bidder for Point Beach (2 unit 522MWe PWRs in Wisconsin) replacing NMC as operator in August, 2008.
- In April 2007, Entergy purchased Paliades replacing NMC (once again) as operator of the plant. NMC had contracts 2 years ago to operate 8 reactors.

### Other Impacts?

## International Brief

International-Finland (July 2007) – A consortium, Fennovoima Oy, of industrial and energy companies have joined together to construct a new power plant in Finland with the intent of operation startup between 2016 and 2018.

British Energy (BE) has sold a 28% stake to institutional investors reducing the government's holding from 64% to 36%.<sup>4</sup> reactor designs have been submitted to be accepted for building in the UK, ACR 1000, EPR, ESBWR, and AP 1000.UK (March 2007). In addition, a court case brought by Greenpeace accused the government of not exercising the consultation progress as intended for building new reactors. This has created a substantial delay as the issue was supported by a decision by a High Court Judge and accepted by BE.

## NWI's Efforts so Support 95-003 Inspections (Cont. from Page 1)

causes of performance deficiencies and to support the formulation of actions to achieve "sustained performance improvement for the long term." Two overriding objectives were established: 1) Improving performance and achieving cultural transformation as an ultimate goal; and 2) Engaging Palo Verde's workforce, including contractors, in ImPACT's activities and the development of recommendations for improved performance. In meeting these objectives, the charter stated, several positive outcomes were expected, including fostering PVNGS morale and ownership of the need for continuous performance improvement, assuring the public that PVNGS is a vital energy resource vital to the future electric generating needs of the area, building NRC's confidence in PVNGS, and developing renewed confidence among Palo Verde's co-owners, state and local regulators and the financial community.

A Collective Evaluation (CE) & Action Plan Development Review Team (RT) made up of key line management personnel and core members of the ImPACT organization. The establishment of the RT was intended to address lessons learned from previous improvement efforts at PVNGS, including the lesson that involvement of line organization personnel in developing and implementing im-

provement plans is essential to success. RT members included the director of ImPACT and other members of ImPACT's core team, the PVNGS Plant Manager, the directors of Maintenance, Radiation Protection and Nuclear Fuels Management, the director of the Steam Generator Replacement project, two Operations Department leaders, and the Performance Improvement Department leader. ImPACT is a collection of assessments designed to ensure that PVNGS has identified – and understands – the primary factors that led to its performance decline. From this collection of assessments, corrective action plans will be formulated and incorporated into the site's integrated improvement plans. Employing up to 80 people at its peak in May 2007, ImPACT has relied on APS employees and consultants to implement the variety of assessments that make up the project, including experts in database development and data analysis. ImPACT has continued to evolve as initial assessments were completed and enhanced the understanding of underlying performance issues and the need for additional assessments.

Collective Evaluation Process (see Figure page 4) included assessments covering Historical Data Review (HCE), Key Attribute Review (KART), Identifying, Assessing and Correcting Performance Deficiencies (IA&CPD), Focused Assessments, Safety Culture Assessment, an overall evaluation and action plan development. In support of the historical data review, NRC Inspection Manual Inspection Procedure 95003, "Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or One Red Input", was used to develop an assessment plan which included topic specific checklists. The checklists reviewed areas contained in the NRC Inspection Procedure 95003 and identified facts and issues related to deficient performance. Problem Development Sheets (PDS) were completed using information contained in the checklists and used as additional input for topical area selection. Current assessment data was input to the potential topical areas from recent plant performance including the INPO Plant Evaluation preliminary summary. A collective significance analyses was performed on the current assessment data followed by a comparative analysis with the data collected during the Historical Collective Evaluation (HCE) to determine if additional topical areas were identified. Data from all sources resulted in identification of 32 potential topical areas. The 32 possible topical areas were reviewed by ImPACT Review Team members and factored into determining the level of significance of each topic area resulting in selection of 12 topical areas.

*(To be continued in Winter 2008 Issue)*



## Going Forward: US Reactor COL's

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- New Jersey Department of Environmental Protection (DEP) declines endorsement of Oyster Creek 20 yr license renewal (July 2007). DEP concluded that continued operation would have an unacceptable impact on marine life. While outside of the NRC renewal process, some impact is expected. No power reactor renewal has been denied to date with 48 have been granted. Bill to repeal moratorium on power reactor construction in California died in committee (July 2007). [Sources: Nuclear News, American Nuclear Society, March through August, 2007, NRC web site, PROs newsletter, Summer, 2007.]

### NWI News Update...

- Efforts underway to support Palo Verde's 95-003 inspection (see article page 2)
- SONGS leadership initiative to start in September (highlighted in future Newsletter)

## New INPO Training Warning Flags...Self-Diagnosis Checklist

### You have weak leadership and ownership when ...

- Managers, supervisors, and workers don't understand how important training is or how to use it for improving plant performance
- You think training must be doing well because plant performance is good
- The training-related roles and responsibilities of line managers, supervisors, trainees, and incumbents aren't part of the plant culture
- Managers don't recognize or detect significant problems when they monitor and oversee training processes and activities
- Line managers infrequently observe training, provide meaningful comments, or verify that expectations are met
- **Line managers inconsistently support training oversight committees**
- **Line and training managers do not provide routine oversight of trainee evaluation methods**
- Workers are assigned to tasks for which they are not qualified
- First-line supervisors don't attend continuing training with their crews
- The training staff doesn't feel responsible for plant performance
- Line managers don't know the training process or industry training standards
- Managers believe it's up to the training organization to make training effective
- Training managers don't communicate training deficiencies to the appropriate line managers
- Student dissatisfaction isn't recognized or responded to in a timely manner

### You have weaknesses with the conduct of training and trainee evaluation when...

- Trainers and evaluators don't model management expectations in the areas of human performance and industrial safety standards and behaviors
- Training materials and exam banks are not current when used

- Trainers and evaluators don't reinforce standards and expectations in the classroom, simulator, and in-plant training
- Students aren't evaluated in non-technical skills and behaviors during initial task qualification and continuing training
- Students don't participate in class activities or discussions
- Makeup training isn't completed, or it's conducted at a standard that's lower than the original training standard

### You have weak self-assessments when ...

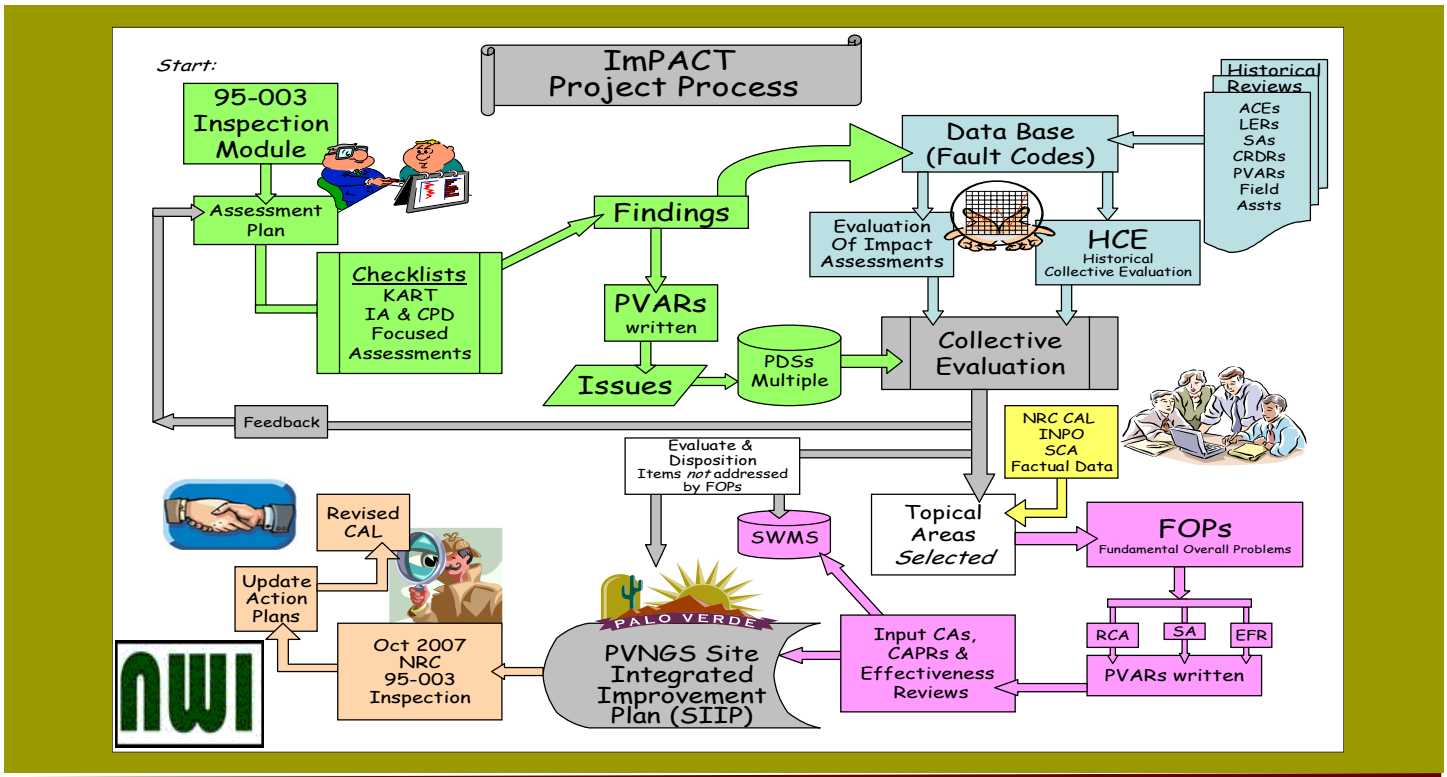
- Self-assessments aren't thorough or critical enough to identify weaknesses
- Line managers aren't active in self-assessment activities
- **Corrective actions taken as a result of weaknesses identified during self-assessments are not fixing and preventing recurrence**
- There's no follow-up to evaluate if corrective actions are effective
- Problems identified in one program aren't considered in other programs
- Observations of training activities aren't included
- Industry training and qualification lessons learned aren't considered
- Training weakness trends identified from previous internal assessments and external evaluations aren't identified

### Your training organization is isolated if...

- Your training personnel don't have much interaction with other plant personnel, don't participate as peers on self-assessment or accreditation teams, or aren't aware of training lessons learned from other plants
- Benchmarking activities related to training are infrequent and don't result in change

### Your use of the systematic approach is weak when...

- Training doesn't address known performance problems or knowledge and skills needs that are identified
- Training processes aren't part of plant or corporate change management policies, procedures, or practices
- Line managers don't know how to apply a systematic approach to training



## New INPO Training Warning Flags...Self-Diagnosis Checklist (cont. from p. 3)

- Training impacts aren't considered after significant changes are made to the organization, processes, equipment, or procedures
  - Training needs aren't considered when new positions are developed or existing ones are modified
  - Methods for determining training effectiveness are not identified
  - **Continuing training is not consistently used to refresh fundamental knowledge**
  - **Candidate selection and evaluation of training needs are not rigorously implemented.**
- You don't have the right training resources and expertise when...**
- Strategic planning doesn't consider or include long-term training needs or the aging workforce's impact on training
  - Training's staff size is reduced without consideration of the long term impact
  - Cumulative knowledge, skill, and experience of the training staff have declined
  - **New instructors do not receive the necessary training and qualification to successfully perform in that role**
- Simulator capabilities have not kept pace with operator training needs
  - Training managers have little training experience and don't receive training or mentoring
  - Training managers and staff have other duties that compete with their training responsibilities
  - Requested training isn't timely, or it's not provided
  - The backlog of significant training corrective actions is trending up
  - **Training facilities are in need of upgrade.**
  - **You know distractions impact training when...**
  - Continuing training is suspended during prolonged outage periods
  - Other activities take the focus away from training (for example, merger/acquisition activities, major regulatory challenges, significant plant performance issues, and extensive support of plant activities)
- Note: Bolded items are new/revised, Source: INPO Training Warning Flags

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- OPPD's Ft. Calhoun
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- APS's Palo Verde Nuclear Generating Station
- TVA's Watts Bar Plant
- FPL's St. Lucie & Turkey Point's Nuclear Stations