SUMMER 2010
VOLUME 6
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Nuclear Initiatives

THROUGHPUT ASSESSMENT SCREENING FOR LICENSE CANDIDATES

Throughput Assessment Screening Tool (TAS) is a three phase prediction tool designed for determine the probability of an initial license (ILT) or initial non-licensed operator (NLO-I) candidate to successfully complete the nuclear power training programs. The individual performance output of the three evaluation phases are processed using a complex empirically-derived algorithm that correlates basic mathematics & science knowledge (BSE), comprehension and problem solving abilities (CE) and situational awareness performance (SA). TAS normally is conducted as a 6 hour assessment per candidate with a resultant confidential candidate performance profile identifying the resultant testing outcome including recommendations for ILT class entry.

The first two phases of the assessment, basic mathematics & science knowledge (BSE), comprehension and problem solving abilities (CE), are written evaluations. These evaluations assess whether the candidate has the necessary entry-level knowledge and cognitive abilities to succeed in the programs.

The third phase is the situational awareness performance (SA) assessment that has been validated by industry experts form a cross section of disciplines. This 1 to 1.5 hour scenario–based evaluation determines, within a short period of time, the candidate's ability to multi-task and to predict situational outcomes, while monitoring and making decisions using significant amounts of data. The evaluation measure the same conditions an operator would encounter; monitoring and evaluating large amounts of data and critical parameters to make timely decisions. In addition, distractions are inserted into the scenarios further ensure the conditions are similar to what an operator would experience. The evaluation of thought processes and decision-making ability requires the candidate to assimilate system interrelationship information and knowledge while handling some distractions that compound the candidate's problem-solving ability. This phase evaluates the ability of a candidate to ascertain the correct information and prediction from a large amount of scenario-driven variable data streams. The goal of the scenario exercise is to provide an opportunity to evaluate the potential License candidate's ability to perform activities in the following areas:

- Multi-tasking
- Prioritization
- Communication
- Short Term Memory
- Utilization of Resources
- Ability to handle distractions
- Personal emotions control

The objectives of the SA, within the scenario, are to demonstrate the ability to:

- Predict and/or monitor changes in parameters.
- Correctly use procedures or processes to correct, control, or mitigate the consequences of normal and abnormal operations.
- Monitor ongoing developments to ensure proper completion of the appropriate tasks.
- Complete administrative requirements to complete the appropriate tasks.

Note: TAS weighting factors for SA simulations are proprietary for exclusive use by NWI I

Inside this issue:

NWI in China

Exelon Nuclear Partners (ENP) Training representative, with support from NWI, visited the Daya Bay Nuclear Site during the week of March 15th, 2010. The visit was part of on-going discussions between ENP and DNMC regarding DNMC's interest in training program and other support from ENP. ENP Training Team members were as follows:

- John P. Lindsey – Exelon Nuclear Corporate Training Director, ENP Training Team Lead
- Elizabeth Bogue – Exelon Nuclear Site Training Director, Byron Station
- Dr. Ron Fritchley – Retired INPO SMR, Koeberg South Africa Accreditation Team Manager
- Dr. Frank Tsakeres – President NWI Consulting

This four-person team spent two days conducting observations and interviews with the DNMC Nuclear Training Center (NTC) staff and then provided their observations/input to DNMC management . The information exchange was guided by using INPO accreditation objectives and criteria.

Some recommendations for further discussion were included in the meeting, as well as noted DNMC good practices.

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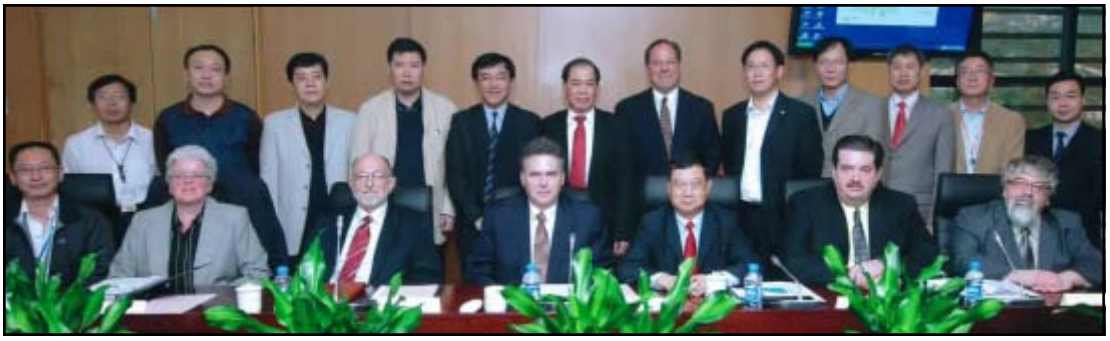
NWI In China

(Cont. from p.1)



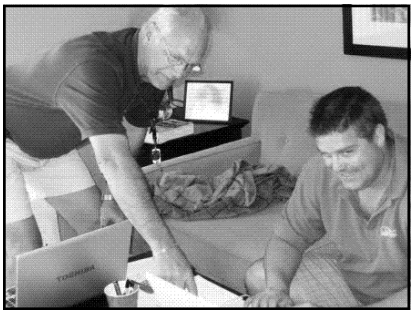
The team enjoyed a tour of the site including one of the four operating PWR reactors (Daya Bay 1 & 2, Ling Ao 1 & 2) and one of the two additional PWR's under construction (Ling Ao 3 & 4). Ling Ao 3 is expected to come on line in July 2010, with Ling Ao 4 forecasted to come on line in early 2011. It was noted that the site had plans to add two more PWR units in the near future. Ling Ao 1&2 were CPR (Chinese Pressured Water reactors while Daya Bay 1&2 were the French EPR design. This 10 km^2 site contained thousands of workers including housing, numerous cafeteria's, and other ancillary support facilities (e.g., medical units, stores, etc.).

DNMC is one of several Chinese companies managing nuclear units throughout China and part China's aggressive future nuclear power strategy which has forecasted to build numerous reactors by 2018.

Following a tour of the reactor sites, the team toured an extensive training complex. DNMC's Nuclear Training Center (NTC) consisted of eight modern training buildings with a gross floor area of 20,000 square meters (215,280 square feet). These buildings were equipped with comparable A/V equipment as in the US for conducting high quality training. Simulator buildings housed the simulators and equipment needed to conduct training and maintain the simulator, (note: simulators are engineered models, the Turbine island and BOP were modeled). At the time of the tour, DNMC had 4 full scope simulators. One of the buildings called the Skills Training Center contained many mockups, models, and labs for conducting hands on and human performance fundamentals training. An additional building is under construction and is planned to be used for refueling training. This facility will include a refuel bridge and a fuel pool for actual performance training and evaluation. By 2020, DNMC plans to have 24 units that will be supported by the NTC.

The week-long exchange was valued by the team and DNMC staff and management.

MANAGEMENT EFFECIIVENESS INDICATOR–*(CONT. ON P.4)*



While leadership is easy to explain, leadership is not so easy to practice as it is very different from management. Some people have leadership ability, some people have management ability, but it is rare to find people with both leadership and management abilities. Leadership is typically about behaviors first and skills second. It has been said that good leaders are followed because people trust and respect them, rather than the skills they possess; and good managers are followed because they possess the skills to develop people into productive, engaged and self-sufficient employees. Management relies more on planning, organizational and communications skills. Leadership relies on management skills too, but more so on qualities such as integrity, honesty, humility, courage, commitment, sincerity, passion, confidence, positivity, wisdom, determination, compassion, sensitivity, and a degree of personal charisma.

Management Effectiveness Indicator (MEI) - The MEI is a tool that has been developed to measure the application of a Systematic Approach to Management model (SAM) and the Systematic Approach to Accountability model (SAA). The MEI metric initially requires the development of an anonymous base line data set that is later focused more succinctly to allow intervention strategies that can change behaviors resulting in a positive change.

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THROUGHPUT ASSESSMENT SCREENING FOR LICENSE CANDIDATES

(Cont. from page 1)

In addition to the SA, a psychometric was applied to all candidates to obtain insights as to their personality preferences. For example, integration skills and rule-based compliance are just two of the characteristics identified using this instrument.

Each student's raw SA evaluation score and class performance scoring is provided for review. Applying the complex NWI interrelationship algorithm, performance strengths and weaknesses as well as an overall prediction score is provided for review and management evaluation. (*Requests for further evaluation and consultation regarding individual and class performance can be provided by NWI upon request*.)

The TAS evaluation is conducted by NWI consultants and a client representative using the TAS evaluation attribute standards and scoring tool. The results of all three phases are processed using a complex algorithm resulting in a confidential report that is provided to the client.

The remainder of the methodology is dedicated to providing a cumulative review of all three phases of TAS, analyses using the complex interrelation algorithm and candidate recommendations. The report contains; individual candidate results; overall candidate scores for each TAS phase. In addition, the report contains the definitions of psychometric terms and statistical analysis used in the client report.

The performance gap that is targeted by TAS is to:

- Reduce license candidate failures and increase throughput from selection to successful licensure for reactor operator and senior reactor operator candidates.
- Secure a more technically-based decision process for license candidate selection.
- Reduce stranded investment costs from license candidate failures.

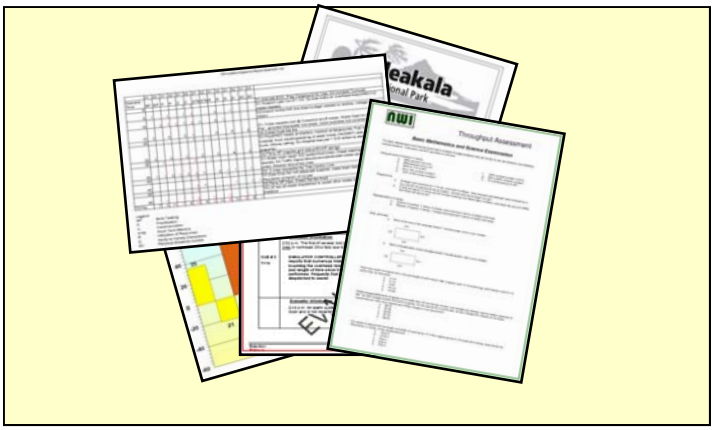
Summary

TAS is a program that applies rigorous and objective performance analyses of potential licensed operator (ILT) candidates. TAS contains 3-phases to assess the probability of successful candidate ILT completion and effective skill performance. Candidates are screened using a 3-tiered approach that includes;

- Fundamental Knowledge Spectrum (basic aptitude test battery)
- Technical Knowledge Interrelationships (problem solving, higher/lower cognitive test items)
- Situational Assessment (Program uses a 7 attribute situational awareness assessment)

Candidate failure risk is technically evaluated and provides a greater success predictor resulting in an increased return on investment (ROI) for the utility. An additional advantage of this technique is that it removes personal bias from selection decisions.

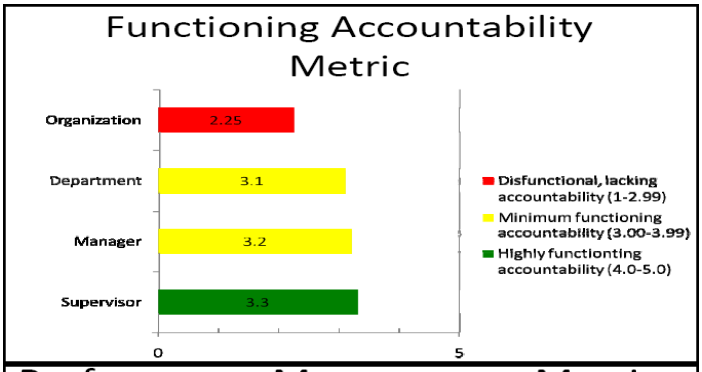
Requests for further evaluation and consultation regarding individual and class performance can be provided by NWI upon request.

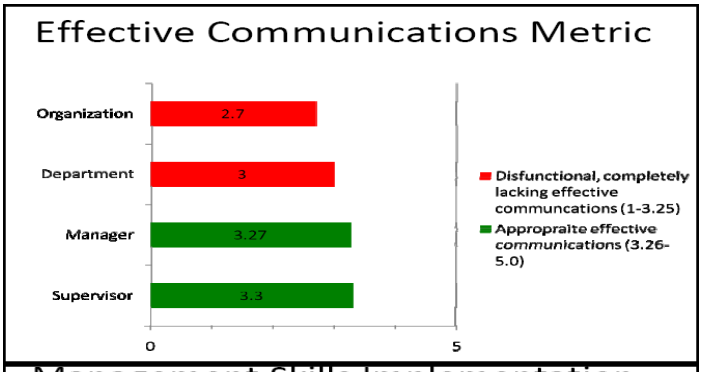


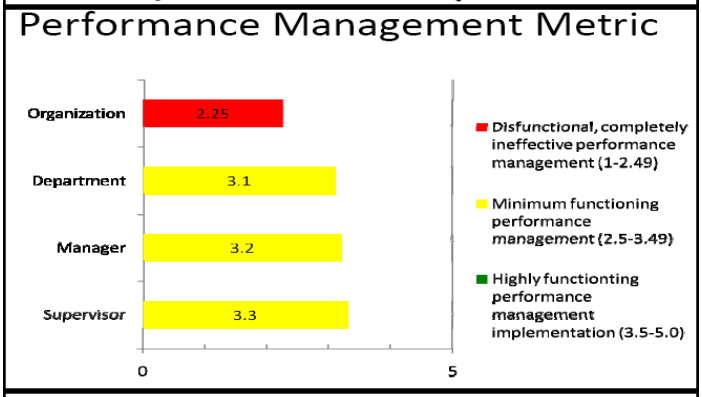
San Clemente, Ca.–Relationships are building as the strong NWI team at SONGS not only work together, but socialize and relax together!

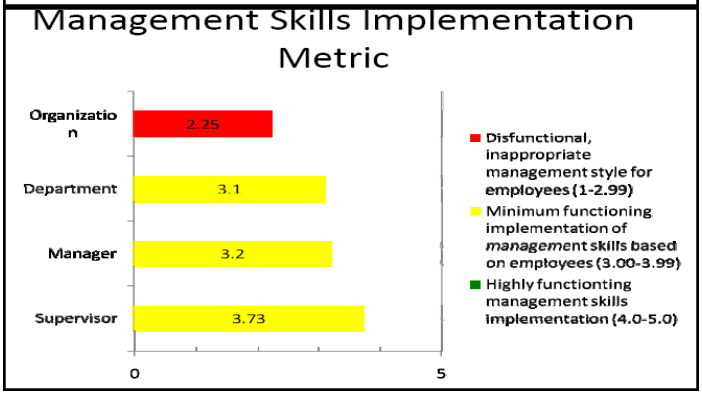
MANAGEMENT EFFECIIVENESS INDICATOR–(CONT. FROM P.2)

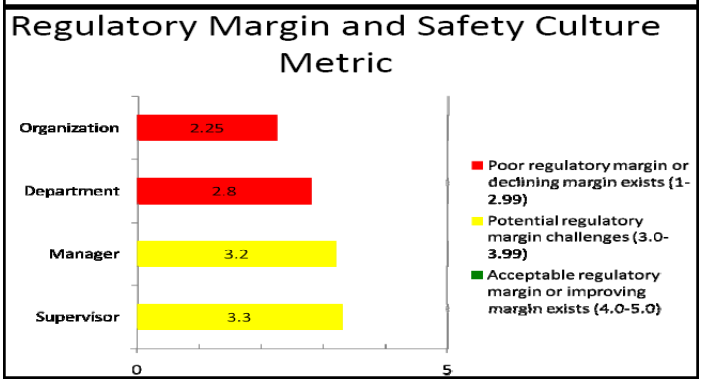
Subsequent survey results will identify gaps to management excellence and "real time" individual mentoring opportunities. Ultimately, the MEI will indicate the level and trend of management performance in 5 key areas: Functioning Accountability, Management Skills, Effective Communications, Performance Management, Regulatory Margin and overall organizational Safety Culture. The levels of effectiveness results are color coded as RED, YELLOW, BLUE and GREEN in each performance area and after subsequent administrations of the MEI, trending arrows show decreased, maintaining or increased level of effectiveness in each category and overall. The scoring is applied to individual manager data and is compiled into a status of the overall organization's leadership team's effectiveness. A series of metrics can assist an organization in pin-pointing the areas that require attention and remediation. MEI provides the following metrics for organizational review and action;











- Functioning Accountability
- Effective Communications
- Performance Management
- Management Skills Implementation
- Regulatory Margin and Safety Culture

NWI support can be provided in multiple implementation strategies that fit your company needs. Model implementation assistance can be provided which varies from a few day training sessions on how the management model works and how to implement the model, to a comprehensive assistance plan that includes training and implementation of the model; including the required interaction with the Human Resource department for es-

MANAGEMENT EFFECIIVENESS INDICATOR–(CONT. FROM P.4)

tablishing appropriate employee performance reviews and goals, development of roles and responsibilities, expectations, development of metrics, and the implementation of effective employee coaching and feedback.

NUCLEAR ENERGY HIGHLIGHTS

Nuclear Power Job Stats...

- 15,000 ~ Number of jobs added to the U.S. nuclear power industry in the past three years
- 21,000 ~ Potential number of new jobs in the nuclear industry if all 26 reactor applications are approved and built
- 1,000 ~ Number of TVA nuclear employees eligible to retire in the next year
- 500 ~ Average number of employees at a 1,000-megawatt nuclear power plant, compared with 220 at a comparable coal plant and 60 at a comparable natural gas plant

Sources: Nuclear Energy Institute, Tennessee Valley Authority

NRC Chairman Gregory Jaczko (L) signs an agreement strengthening nuclear safety cooperation with China at the Strategic and Economic Dialogue. Jaczko was in the U.S. delegation led by Treasury Secretary Timothy Geithner and Secretary of State Hillary Clinton (L-R behind Jaczko). Signing for China was Jaczko's counterpart, Li Ganjie (R), vice minister of the Chinese Ministry of Environmental Protection and administrator of China's National Nuclear Safety Administration. Behind Li (L-R) are Vice Premier Wang Quishan and State Councilor Dai Bingguo. (Pool Photo by Saul Loeb/AFP, via Getty Images)

Uranium-mining leaders and federal regulators poised to fuel a resurgent nuclear power industry gathered in Denver on Wednesday, May 26, 2010, vowing to do a better job of protecting the environment but drawing demonstrators nonetheless. Nuclear Regulatory Commission officials indicated they're expecting applications for uranium projects at 25 sites by 2013, along with applications to establish 28 new nuclear power plants. The United States now imports 95 percent of the uranium used at existing nuclear power plants, said Katie Sweeney, general counsel for the National Mining Association, which is running the conference in Denver. Foreign suppliers include Australia, Canada, Kazakhstan and Russia.

May, 2010— "On energy, the President told the conference that the gulf oil disaster should heighten our sense of urgency to hasten the development of new, clean energy sources that will promote energy independence and good-paying American jobs," the White House said in a statement after the meeting. "And he asked that they work with him on the promising proposals currently before Congress."

So far, the NRC has issued four ESPs: for Exelon's Clinton site in Illinois; Entergy's Grand Gulf site in Mississippi; Dominion's North Anna site in Virginia; and Southern's Vogtle site in Georgia. It is also currently reviewing an ESP application from Exelon for its proposed plant in Victoria County, Texas.

TVA is part of a consortium which is pushing to get the reactor, known as "mPower," approved for commercial use. The nuclear core and steam generators are contained within a single vessel of the mPower unit. It would operate for 4 1/2 years without refueling. Babcock and Wilcox says the mPower reactor could be used to re-power aging coal plants, where transmission and distribution infrastructure is already in place. TVA President Tom Kilgore says he's excited by the mPower concept, but adds, "It's probably the end of this decade before we can see one of those really go into operation." The small reactors that would produce 125 megawatts of power are expected to cost about $375 million.

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NWI Assisting Calvert Cliffs

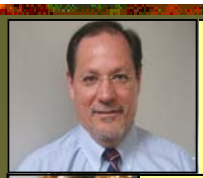
Commencing in April of 2010, Roger Armitage, Bill Lindsey, and Frank Tsakeres are assisting CENG's Calvert Cliffs Nuclear Power Plant (CCNPP) in development of a training excellence planning and Accreditation readiness for the Maintenance & Technical training programs. Strategic, as well as tactical, initiatives deployment are the focus of this NWI effort. In addition, fleet-wide lessons learned are being captured along the way and disseminated through corporate liaisons. These NWI professionals bring a wealth of practical experience and multi-discipline expertise that has already had a positive impact on the CCNPP training programs.

NWI News Board

- Dave Fan, Abdul Ragab, & Bill Cheever are assisting Monticello in preparation for their upcoming EPU outage in the design engineering and project management areas.
- Rey Gonzalez & Bill McNeill assisting TVA's Watt Bar & Browns Ferry Nuclear Plants in Technical Human Performance (HU).
- Terry Johnson has joined the Vermont Yankee training team supporting the current ILT teaching load.
- Ernie Harkness continues to support Entergy's Nuclear Safety Review Board.
- Bill McNeill, Terry Johnson, Dave Hoffman, & Tallman Whitler development efforts in new TAS upgrades.
- David Knox, Marv Engen, John Hurato, Ken Davidson, and Frank Tsakeres are assisting SONGS in Maintenance & Technical Training preparations for their upcoming ATV while Paul Kirker & Dave Hoffman continue to support operations improvement initiatives. Also, Tim Bostwick continues to lend his CAP expertise and insights to the overall upgrade efforts underway at SONGS.
- Rey Gonzalez is supporting McGuire Station in the area of HU training and coaching initiatives.
- Mike Short is continuing support of APS & SONGS' numerous engineering activities.
- Mike Gettle and Ray Waldo continue to support Ontario's Bruce Power's training programs.
- Steve Pettinger is supporting AEP's DC Cook training in NRC ILT exam development.
- Dan Slater continues to assist APS's Palo Verde procedure development upgrades.
- Bill Lindsey, Roger Armitage & Frank Tsakeres have started to support training excellence planning at CENG's Calvert Cliffs.

We wish to express special thanks to the following clients for recently making NWI a preferred full services

- AEP's D.C. Cook Nuclear Power Plant
- APS's Palo Verde Nuclear Station
- Bruce Power –Ontario, Canada
- Duke Energy's McGuire Plant
- Vermont Yankee
- Calvert Cliffs,
- SCE's San Onofre Nuclear Generating Station
- Next Era Energy's Point Beach Power Station
- Exelon Nuclear Partners
- Xcel Energy's Monticello Plant



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Our program specialties include: Human Performance, Training and Accreditation, Simulator Instructor Training, Operations Training, Engineering Services, Corrective Actions Program Improvement, Root Cause Analysis and Self-Assessment, NRC Exam Writing, CBT for Dry Cask Storage/ RadWaste Training, and many Human Performance Trainers.

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