

H. Miller
From: "Daye Lochbaum" <dlochbaum@ucsusa.org>
To: <hjm1@nrc.gov>
Date: 3/9/04 10:11AM
Subject: Allegations regarding Salem / Hope Creek Safety Culture

Dear Mr. Miller:

Attached is an electronic copy of a letter being mailed to you today. UCS is alleging that PSEG violated 10 CFR 50.9 in its February 27, 2004, response to NRC. We are providing results from the recent Synergy survey - marked "PSEG Confidential" - as evidence of this violation. PSEG mentioned the survey in its response, but failed to discuss the results either qualitatively or quantitatively. 50.9 requires information to be complete and accurate, not just one of the above.

We are also submitting the safety culture survey conducted last year at Davis-Besse. The PSEG results are worse.

This site under this management has a history of promising corrective actions that it cannot or will not meet, thus venturing along a series of plans that do not produce a successful outcome - a "don't loop" if you will. Their reaction to your January 28th letter was predictable - as is their expected inability to follow-up with substantive actions.

We think the NRC should issue an order to PSEG requiring the company to demonstrate tangible improvement in its safety culture, particularly its corrective action program and Employee Concerns Program, within six months. If signs of improvement are not evident in six months, all three reactors should be shut down until progress is made.

If PSEG is sincere - this time - then the six month milestone should be no barrier to them. If PSEG is insincere or PSEG is sincere but incapable, then the six month milestone is a reasonable "probation" period.

The NRC order would have a significant positive impact on the workers at Salem and Hoep Creek. Right now, they are under the gun. The non-union workers have performance clauses - they must satisfy their bosses or lose their careers. Senior management, which gave the workers the broken corrective action process, is currently unaccountable. The NRC's order would give senior management a performance clause, too. It would then be in everyone's interest at PSEG to work together to solve these problems.

Thanks,

CC: <arb@nrc.gov>, <djv@nrc.gov>, <GWM@nrc.gov>

B-102



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

March 9, 2004

Mr. Hubert J. Miller, Regional Administrator
United States Nuclear Regulatory Commission Region I
475 Allendale Road
King of Prussia, PA 19406-1415

**SUBJECT: ALLEGATIONS REGARDING SAFETY CULTURE PROBLEMS AT THE
SALEM AND HOPE CREEK GENERATING STATIONS**

Dear Mr. Miller:

I have spent considerable time over the past two years monitoring the Davis-Besse nuclear plant in NRC Region III. Three dates in Davis-Besse's history – September 24, 1977, November 28, 2001, and December 19, 2003, appear relevant to the deteriorating safety culture at the Salem and Hope Creek Generating Stations in your region. The relevance of these dates is described in the following sections:

September 24, 1977: Davis-Besse was operating at about 9 percent of full power when feedwater flow to the No. 2 steam generator stopped. This caused the pressure of the primary system to rise to the point where the pressurizer's power-operated relief valve (PORV) opened to check the rise. The operators manually tripped the reactor within two minutes. When the primary system pressure dropped, the PORV stuck open, allowing reactor coolant water to flow to the quench tank inside the containment building, quickly overpressurizing it and causing the tank's rupture disc to blow. Meanwhile, the high pressure injection pumps automatically started when the primary system pressure dropped to 1,600 pounds per square inch. The operators manually stopped the high pressure injection pumps approximately six minutes into the event as level in the pressurizer rose above normal. Water continued to escape the primary system via the stuck open PORV. Voids formed in the reactor vessel as the plant started down the path to meltdown. But 22 minutes into the event, operators properly recognized that the rising pressure inside containment was due to a primary system leak. They soon detected the stuck open PORV and closed the in-stream block valve to terminate the loss of coolant accident. The plant was soon in a stable, controlled condition.¹

On March 28, 1979, an eerily similar event happened at Three Mile Island Unit 2, except that the reactor was at 97 percent power. The reactor tripped, the PORV stuck open, and the operators manually stopped the high pressure injection pumps to put the plant on the path to meltdown. This time, no one intervened along the way. The operators recognized the PORV was stuck open and closed the block valve over two hours later, after the reactor core experienced a partial meltdown.

Subsequent inquiries revealed that the lessons learned by NRC from the Davis-Besse near-miss were never communicated to the owners of similar reactors such as Three Mile Island Unit 2 or even to its own staff of reactor inspectors.

The Kemeny Commission appointed by President Carter to investigate the Three Mile Island accident concluded:

The equipment was sufficiently good that, except for human failures, the major accident at Three Mile Island would have been a minor incident. But, wherever we looked, we found problems with the human beings who operate the plant, with the management that runs the key organization, and with the agency that is charged with assuring the safety of nuclear power plants.²

and

After many years of operation of nuclear power plants, with no evidence that any member of the general public has been hurt, the belief that nuclear power plants are sufficiently safe grew into a conviction. One must recognize this to understand why so many key steps that could have prevented the accident at Three Mile Island were not taken. The Commission is convinced that this attitude must be changed to one that says nuclear power is by its very nature potentially dangerous, and, therefore, one must continually question whether the safeguards already in place are sufficient to prevent major accidents. A comprehensive system is required in which equipment and human being are treated with equal importance.³

November 28, 2001: Davis-Besse was operating near full power despite concerns by the NRC staff about the integrity of control rod drive mechanism (CRDM) nozzles penetrating the reactor vessel head. All of the reactors in the US like Davis-Besse had recently reported cracked and/or leaking CRDM nozzles. The NRC staff was sufficiently concerned to draft an order that would have required Davis-Besse to be shut down by the end of the year for CRDM nozzle inspections. But on November 28, 2001, the NRC staff shelved its draft shutdown order and permitted Davis-Besse to continue operating. When Davis-Besse ultimately did shut down and inspect its CRDM nozzles, very serious problems were discovered that took more than two years to correct.

Part of the rationale behind the NRC's decision to shelve the draft shutdown order was its confidence in the backup systems needed to protect the public in the event a suspect CRDM nozzle failed. However, that confidence was misplaced. Among the many repairs made at Davis-Besse in addition to the cracked and leaking CRDM nozzles were (a) modification of inoperable high pressure injection pumps, (b) modification of the containment sump screens that disabled both the recirculation mode of the emergency core cooling system and the containment spray function, and (c) virtual replacement of the containment air coolers and associated ducting to restore the post-accident ventilation function.

The NRC staff's decision on November 28, 2001, was also hindered by inaccurate and incomplete information given to it by FirstEnergy regarding the condition of the reactor vessel head and CRDM nozzles. For example, the NRC later determined:

[FirstEnergy's September 4, 2001] response stated, "The boric acid deposits were located beneath the leaking flanges with clear evidence of downward flow. No visible evidence of nozzle leakage was detected." This was inaccurate, in that the boric acid deposits were not limited to the area beneath the flanges as implied by that statement and, in fact, the build-up was so significant that all of the nozzles could not be inspected. There was no basis for stating that no visible evidence of nozzle leakage was detected.⁴

December 19, 2003: Davis-Besse was at zero power, and had been at zero power since February 16, 2002, when an NRC team evaluating safety culture at the site reported:

Based on recent survey results indicating a decline in a number of significant areas, the team does not have reasonable assurance in the quality and consistency of future licensee performance.⁵

The NRC declined FirstEnergy's request to restart Davis-Besse because the safety culture had not yet been restored to proper levels.

These dates are relevant to the current degrading safety levels at Salem and Hope Creek in the following ways:

1. The lessons learned from the near-miss at Davis-Besse on September 24, 1977, had not been communicated to other reactor owners or incorporated into the NRC's regulatory oversight processes when the accident happened at Three Mile Island. While the details about the near-miss at Davis-Besse in 2002 have been communicated to other reactor owners, the NRC has only incorporated 16 of the 49 lessons learned into its regulatory oversight processes.⁶ Those recommendations were specifically developed with the objective of preventing another regulatory breakdown, but can only be expected to reach that objective after they are implemented. The ACRS implicitly conceded this point:

The NRC staff's Lessons-Learned Task Force (LLTF) concluded that (Reference 6):

The NRC failed to adequately review, assess, and followup on relevant operating experience, and

The NRC failed to integrate known or available information into its assessments of Davis-Besse's safety performance.⁷

2. The current NRC oversight process places great reliance on equipment reliability in both the performance indicators and NRC inspection modules. Human performance is given secondary emphasis within the oversight process as something that might factor into declining equipment reliability. This unequal treatment is in direct contradiction of a major finding of the TMI accident inquiry: "A comprehensive system is required in which equipment and human being are treated with equal importance." The NRC's reactor oversight process assigns secondary importance to the human element in it issues a warning only when human performance manifests itself in degraded equipment conditions.
3. The decision made by the NRC staff on November 28, 2001, was based on information later determined to be woefully inadequate. The NRC staff knew neither the reality of the condition of the reactor vessel head/CRDM nozzles nor the extensive degradation of the backup safety systems. Had the NRC staff had benefit of information that should have been available at that time, its decision would have been different. As detailed below, PSEG has not provided Region I with a complete and accurate report on the safety culture at Salem and Hope Creek.
4. The NRC staff declined last December to allow Davis-Besse to restart until its safety culture had improved above a minimum threshold value. As detailed below, the results from the Synergy survey conducted at Salem and Hope Creek in December 2003 are worse than the Davis-Besse survey results from March 2003 and significantly worse than the Davis-Besse survey results from November 2003. The improper safety culture prevents Davis-Besse from restarting but does not prevent three reactors with worse safety culture from operating. This is true even though NRC Region III has far greater understanding of the physical condition of equipment at Davis-Besse (due to the thousands of inspections hours expended over the past two years) than NRC Region I has of the equipment at Salem/Hope Creek (based on the limited inspection hours expended over the past two years).

The parallels between Davis-Besse in 2001 and Salem/Hope Creek today are too numerous to be coincidental. Safety margins at Davis-Besse were seriously compromised, but the plant's owner was too focused on production to properly notice the signs. When NRC inquired about conditions at Davis-Besse, the plant's owner with-held and/or misrepresented material information. As a direct result, the Davis-Besse reactor operated in a severely degraded condition.

The safety culture at Salem/Hope Creek is seriously degraded, but PSEG is too focused on production, cost-cutting, and staff down-sizing to properly notice the signs. When the NRC repeatedly warned PSEG about corrective action inadequacies at Salem/Hope Creek, the plant's owner seems unwilling or unable to remedy them. When NRC inquired about the safety culture at Salem/Hope Creek, PSEG's reply of February 27, 2004, with-held and/or misrepresented material information. As a result, the Salem and Hope Creek reactors operate with steadily declining safety levels.

ALLEGATION NO. 1 – PSEG VIOLATED 10 CFR 50.9 BY FAILING TO PROVIDE THE NRC WITH COMPLETE INFORMATION IN RESPONSE TO THE NRC'S JANUARY 28, 2004, LETTER

In letters dated February 13, 2004, and February 27, 2004, PSEG responded to the NRC with its future plans to assess conditions at Salem/Hope Creek. The responses mentioned a recent survey conducted by Synergy, but was silent regarding the results of that survey. PSEG did not provide the NRC with either the qualitative or quantitative results from this recent, relevant survey.

It is clear from the NRC's January 28, 2004, letter that PSEG was obligated to provide the NRC with its assessment of conditions at Salem/Hope Creek and its plans to remedy known problems. But PSEG opted instead to keep the Synergy results from the NRC and only describe its plans. By deliberately and intentionally withholding material information from the Synergy survey from the NRC in response to the NRC's express request for such information, PSEG clearly violated 10 CFR 50.9, which requires that licensees provide the agency with complete and accurate information. UCS obtained the Synergy results and provides them to the NRC now as evidence that PSEG violated this federal regulation. Because the Synergy results are marked 'PSEG Confidential,' UCS requests that NRC treat our allegation as confidential and not refer this matter back to PSEG, unless NRC determines (a) this information fails to meet the proprietary clause of 10 CFR 2.790 or (b) NRC requires PSEG to place ALL of this information on the docket in unredacted form.

ALLEGATION NO. 2 – PSEG MISREPRESENTED CONDITIONS AT SALEM/HOPE CREEK IN ITS FEBRUARY 27, 2004, RESPONSE.

The second page of PSEG's response letter contains this statement: "As you note in your letter, these ongoing efforts are beginning to make positive change at Salem and Hope Creek." PSEG had the results from the Synergy survey in-hand when they prepared and submitted this response. *The results do not support this PSEG statement.* Synergy's process states that "negative pockets >20% are considered to be noteworthy." The negative percentage is that portion of the survey respondents who answered the question with a "Less than Adequate" response or lower.

The PSEG Nuclear Composite rating for the survey question "Overall, my confidence in the Employee Concerns Program was _____ approximately 1 year ago" was a negative 21.42% - noteworthy by Synergy's process but not noted by PSEG in its response to NRC. Similarly, the PSEG Nuclear Composite rating for the survey question "Overall, the influence of Site/Location Senior Management in promoting our Nuclear Safety priorities, i.e. walking-the-talk, leading by example ... was _____ approximately 1 year ago" was a negative 22.86%. But the worst of all was the PSEG Nuclear Composite rating for the survey question "Within my functional organization during the past 18 month, we have made progress in improving the effectiveness of work prioritization and resource management" with a negative 40.51%. These are composite, or overall, results. The results for some individual functional departments within PSEG Nuclear are much worse.

PSEG ignored or dismissed this available and "noteworthy" information when it assured NRC that things were improving.

ALLEGATION NO. 3 – THE SAFETY CULTURE AT SALEM/HOPE CREEK IS WORSE THAN THE SAFETY CULTURE AT DAVIS-BESSE AND OTHER NUCLEAR FACILITIES

UCS compared the results from the Salem/Hope Creek survey to the results of the survey conducted at Davis-Besse in March 2003. Because two different assessment methodologies were used, a qualitative comparison was performed. The following table highlights the many indications that the Salem/Hope Creek safety culture is as bad as, if not worse, than the Davis-Besse safety culture. The column on the left contains verbatim conclusions for Davis-Besse. The column on the right contains verbatim comments from the Salem/Hope Creek.

Conclusion from Performance, Safety, and Health Associates, Inc. survey at Davis-Besse, spring 2003 ⁸	Expurgated Comments from Synergy Consulting Services Corporation survey at Salem/Hope Creek, December 2003
<p>“Although safety is a recognized value in the organization, it is inconsistently accepted and understood across all levels of personnel. Problems still exist in the transmission, comprehension and implementation of the safety message.” Page iv</p>	<p>“Everyone understands that safety, Nuclear, industrial, and radiological, are the cornerstones of our success. ... We have set ourselves up for failure because we, as a management team, do not work together, stick together, or even walk the same line together.”</p>
<p>“Safety is not yet consistently integrated into all activities in the organization. Processes and programs are in various stages of transition, which often reduces their effectiveness.” Page iv</p>	<p>“Our self-assessment process [SAP], in tandem with our CAP [Corrective Action Program] results in another ethical diploma [sic, dilemma]. When I identify a problem and enter it in CAP it usually gets re-assigned to me. So, I pace my entries in SAP for CAP so I don’t overwhelm my backlog. I only enter problems in CAP when I have time to work them, since I know I will get them back.”</p>
<p>“An integrated and cohesive organization safety leadership process does not yet exist. The values and attitudes of the workforce are generally positive, but the many differences found between work groups, and between management and staff, indicate that personnel are not yet aligned with a common set of values. Management’s safety goals have not been consistently communicated to nor understood by Station personnel.” Page iv</p>	<p>“I believe every employee strives to achieve and perform their work with nuclear safety in mind. When management changes every other year, so does the focus of the work force. The commitment to nuclear safety does not change just our approach to it.” “We change leadership so often that the culture and work environment are cloudy and confused.”</p>
<p>“Safety is not learning driven in the organization. Efforts to improve future performance by learning from the Station’s past performance, from others’ performance, and from the day-to-day implementation of the organization’s programs and processes, are not systematic or recognized to be of high value for the organization.” Page iv</p>	<p>“We don’t resolve problems. We re-cycle the same issues over and over again.” “The number of significance level 1 & 2 CR’s [Condition Reports] is way too high thus the quality of each evaluation and corrective actions is not where they should be leading to repeat events and issues.” “I believe we do well at identifying problems at this site, and we do not do so good at effectively implementing fixes to prevent recurrence.” “The Corrective Action Program is an ineffective program. Mistakes and problems are repeated many times, most after a “corrective action” has been taken to stop them.” “We are very good at identifying problems – process, equipment, procedural, etc. We are not as good at identifying the real, underlying causes of those problems. ... We are downright lousy at implementing effective corrective actions.” “Our identification of problems and the reporting process works extremely well. Where we do not do well is we expend too little time and effort on to find the root causes of problems, come up with the correct solutions and implement time in a timely manner.”</p>
<p>“The organizational structure at the Station needs to be stabilized. o Individuals at all levels in the</p>	<p>“The changing of management every five years with a new regime brings turmoil since different people have different ideas and change up in midstream. I have worked here for 20 years and we have had 5 or</p>

<p>Conclusion from Performance, Safety, and Health Associates, Inc. survey at Davis-Besse, spring 2003⁸</p>	<p>Expurgated Comments from Synergy Consulting Services Corporation survey at Salem/Hope Creek, December 2003</p>
<p>organization are being moved in and out of different job positions to facilitate the outage, making it difficult to clearly establish roles and responsibilities.</p> <ul style="list-style-type: none"> o Almost all of the individuals in the manager-level positions have been recently placed and interviews during this evaluation suggested additional changes would be occurring.” Page 12 	<p>6 different managers.”</p> <p>“Senior leadership team is changed too frequently, to provide consistent follow through on items concerning nuclear safety.”</p> <p>“My group management leaders have changed in the past 6 months – a ‘real’ caring was lost and replaced with something much less. ... last year I worked for a hard nose Manager that expected ‘more’ but I respected him and enjoyed working for him. Now I work for ghosts that are rarely here.”</p> <p>“I believe that upper management in our work group changes too often for them to have a really sound basis as to what we do.”</p> <p>“These people have been beaten to death with management styles djour.”</p> <p>“Our biggest problem in upper management is the turnover rate – it seems like every 2 years we have different people with different ideas.”</p>
<p>“Skepticism exists among Station personnel regarding the long-term stability of management’s commitment to safety. The long-term strategy to ensure the organization’s continued commitment to safety should be effectively communicated to Station personnel.” Page 14</p>	<p>“The personalities of the management in Engineering are not as receptive to the identification and resolution of safety issues as the previous organization was.”</p> <p>“In the name of deregulation and cutting costs we are right back today where we were 10 yrs ago and heading right down the same path that led to the long term shutdown. Also, the super short outages are setting us up for failure down the road.”</p> <p>“We need a stable organization and programs and processes to be effective in solving long-standing equipment problems that impact nuclear safety and plant reliability. We haven’t had any stability in these.”</p> <p>“I am concerned that our Nuclear Safety Culture is poised to degrade (as evidenced by recent unit performance and shareholder concerns) strongly reminiscent of conditions in the early 90s.”</p>
<p>“There is a widespread perception of “them versus us” within the organization, particularly among some senior managers were regard to Station personnel.” Page 14</p>	<p>“There are times when senior management does not have the best course of action to correct a situation, and will not accept the recommendations of those below them.”</p> <p>“Employees (or at least this employee) feels that management is more than ready to address concerns as long as they agree with the concern. If the issues are something that is not agreed with then it appears the “management by intimidation” process is alive and well.”</p> <p>“Since [redacted] was hired the performance of the plants and moral of the workforce has declined, while the safety incidents have increased. How a man can come in and lay off dedicated employees one week and crack jokes a week later at a site meeting and wonder why no one is laughing is beyond my comprehension.”</p> <p>“I have worked here for over 20 years and we are doing the same thing we did back in the late 1980s, that is our management is running this plant right into the ground.”</p> <p>“At this point in the game, one would think that we should have already solved any problems, however perceived. After all, we have been doing this for an average of about 25 years per generating station. The unfortunate result of all these years is still an adversarial relationship between management and employees and if you’ll be working here tomorrow.”</p>
<p>“Coordination of work was perceived by many individuals to be in need of improvement and was often perceived to arise from a lack of communication and proactive behavior.” Page 16</p>	<p>“Organization is competent at identifying issues but our follow through and implementation of the corrective actions are below standard – organization needs to get better at implementing effective actions so that issues are completed resolved.”</p> <p>“Our PM [Preventative Maintenance] program is the worst I’ve seen in the industry.”</p> <p>“In my group we seem to “run from one fire to another. We never</p>

<p>Conclusion from Performance, Safety, and Health Associates, Inc. survey at Davis-Besse, spring 2003⁸</p>	<p>Expurgated Comments from Synergy Consulting Services Corporation survey at Salem/Hope Creek, December 2003</p>
	<p>fully finish one job (lean-up, post-job briefs, lessons learned, etc.) before we start another.” “We expend a lot of time and effort addressing comments on why we don’t follow our processes and procedures, and then revise them to make them more complex.” “Work management resolutions are extremely poor. Rather than fix the plant, we hide issues (long standing equipment issues) under different coding criteria in order so they are not counted as backlog.”</p>
<p>Positive: “Management presence in the field was indicated by a number of individuals to have increased.” Page 18</p>	<p>“Upper management should spend time in the field talking to employees and seeking the work.” “A guy who walks around the plants and talks to people, asks questions, and generally comes to us, rather than dragging us out to his amphitheater in the processing center 4 times a year would be a welcome change.” “Managers, superintendents, supervisors in general don’t have established relationships with their workers. Need to spend less time managing us and more time with employees.” “Is it possible for management to just walk around and talk to people every once in a while?” “I’ve been to 27 other nuclear facilities throughout the country over 24 years. The CNO has yet to set foot I the RCA [radiologically controlled area] at Salem Plant. There is no excuse for that.” “I am a manager and have yet to see Roy Anderson [Chief Nuclear Officer] within the Hope Creek control room area – that in itself is amazing to me.”</p>
<p>“The unusually large number of differences identified within and between groups in all of the data collected in this evaluation indicates that a consistent message with respect to desired behavioral changes is not being communicated, understood or accepted throughout the organization.” Page 20</p>	<p>“Safety Council meeting and e-mail information doesn’t appear to be making any improvements. Need to get employee actively involved in safety meetings rather than just throwing data at them.” “Communications between departments is poor. Too much finger pointing. We need to become a team and tear down our silos. All departments need to realize we sink or swim together.” “If safety is a priority, why so many OSHA recordables – we must be doing something wrong.” “Until we do more than talk about a safety culture and safety in performance there is little if anything that can be suggested for improvement.” “So basically, PSEG Nuclear’s philosophy for filling vacancies at its senior management (leadership) level is: 1) Alienate the work force by not even considering long-standing established company employees, 2) Instead, hire some other company’s “cast-off,” 3) Then encourage them to come in and totally disrupt the established organization. Finally, when everything is chaos, the workforce despises management, and the lines of communication have disintegrated, call in an outside company to do a survey to try to ascertain what’s really wrong with the organization.” “In my opinion, we are less people friendly now than we have ever been in the past.”</p>
<p>“Timeliness of issue resolution is problematic and must be improved for personnel to be convinced of process effectiveness and to ensure their continued involvement.” Page 22</p>	<p>“Far too often we let important items take too long or become too hard to correct only to relive them as a challenge to plant operations or be the operators.” “Too often there are issues that take too long to be resolved, i.e. fixing a degraded barrier, and this occurs even after multiple statements have been submitted.” “Our CAP [Corrective Action Program] and work management process stinks; safety problems do not get fixed in a timely fashion.” “The current backlogs of work in all aspects of our business are high out of the norm. I don’t see any effort to address these backlogs,</p>

Conclusion from Performance, Safety, and Health Associates, Inc. survey at Davis-Besse, spring 2003 ⁸	Expurgated Comments from Synergy Consulting Services Corporation survey at Salem/Hope Creek, December 2003
	<p>understand them, and get them under control.”</p> <p>“Strength – I feel that there is a positive culture encouraging the identification of nuclear safety issues without fear of reprisal.</p> <p>Weakness – the satisfactory resolutions of these issues is not always timely. We compromise and live with problems longer than we should.”</p> <p>“We don’t seem to fix any problems we just work around them.”</p> <p>“The Corrective Action Program is broken. It takes years quite often to affect repairs.”</p> <p>“Operator concerns list items and work-arounds are not being addressed due to funding issues. Some of these impact functionality of safety systems.”</p> <p>“Long-standing issues are never addressed.”</p>
<p>“The behaviors associated with a questioning attitude were not consistently observed at the Davis-Besse Station.</p> <ul style="list-style-type: none"> o A general reluctance to pushback on Senior Management was observed during this evaluation. o Individuals tend to be reluctant to initiate communication in meetings with individuals from higher organizational levels.” <p>Page 23</p>	<p>“The re-organization has stifled the willingness to raise issues because the people who were ‘released’ were some of the more vocal personnel.”</p> <p>“In issues other than nuclear safety voicing a dissenting opinion gets you labeled as a non-team player or worse “just a cry baby.”</p> <p>“Between the demographics page and the requirement by management to disregard the 3 options of submitting the survey (and to only hand deliver this to the Dept. Management), the condition of anonymity is violated!”</p> <p>“I have worked for PSEG Nuclear for 20 year. Through every reorganization, I have usually seen a number of “quality” people leave this company, mainly (or so it seems) because they would speak their minds and not tell management only what they want to hear. Usually what is left are people who “kiss up” and cronies of the current regime.”</p> <p>“My first line supervisor reacts in a negative way when concerns are introduced.”</p> <p>“The first line supervision will not take any feedback from our group. They will listen, but it goes in one ear then out the other.”</p>

The negative percentages appearing in the Synergy roll-up results are compelling evidence that these comments are not isolated views but representative of a sizable portion of the work force at Salem and Hope Creek.

UCS also compared the Synergy survey results for Salem/Hope Creek to five other sets of survey results conducted by Synergy in the past five years: two surveys at the South Texas Project nuclear power plant, two surveys conducted at the Diablo Canyon nuclear power plant, and one survey conducted at the United States Enrichment Corporations’ Paducah and Portsmouth gaseous diffusion plants.⁹ [NOTE: UCS found all of these Synergy surveys in the NRC’s public ADAMS, which reinforces our belief that PSEG has insufficient grounds to with-hold their Synergy results from the NRC and the public.] Because Synergy used the same numerical assessment method in all of these surveys, UCS was able to conduct a quantitative comparison. The following table shows that the Salem/Hope Creek safety culture is as bad as, if not worse, than the safety cultures at South Texas Project, Diablo Canyon, Paducah, and Portsmouth particularly with respect to the Employee Concerns Program. The ECP scores and the Nuclear Safety Values, Behaviors & Practices are extremely low at Salem/Hope Creek. There’s also a significant gap between the perspective of the Chief Nuclear Officer and his staff and the rest of the work force regarding conditions at Salem/Hope Creek. Given that the CNO believes things are “Excellent” (which, I seem to recall, is a favorite catch phrase of the most famous nuclear plant owner in history, Montgomery Burns) or “Very Good to Excellent” may explain why things haven’t gotten better in the past year. One cannot fix a problem one doesn’t recognize.

The first column in the following table provides the result category ratings from best to worst. The middle column contains the results for Salem/Hope Creek. The third column provides the results for South Texas Project, Diablo Canyon, Paducah, and Portsmouth.

Rating	PSEG Nuclear Organizations	Other Nuclear Facilities
Excellent	CNO Staff & Support SCWE	
Very Good to Excellent	PSEG Nuclear Composite SCWE CNO Staff & Support NS VB&P CNO Staff & Support ECP Salem Operations SCWE Salem Electrical/I&C SCWE Salem 12 hr/WIN Maintenance SCWE Salem Other Maintenance SCWE Hope Creek Radiation Protection SCWE Training SCWE Engineering/Tech Support SCWE	South Texas Project 2002 SCWE South Texas Project 2000 SCWE Diablo Canyon 2000 Maintenance SCWE
Very Good	CNO Staff & Support NSC Salem Chemistry SCWE Salem Mechanical Maintenance SCWE Hope Creek Chemistry SCWE Hope Creek Operations SCWE Hope Creek Electrical/I&C Maintenance SCWE Hope Creek Mechanical Maintenance SCWE Hope Creek 12 hr/WIN Maintenance SCWE Engineering/Tech Support NSC	South Texas Project 2002 NSC South Texas Project 2002 NS VB&P South Texas Project 2000 NSC USEC 2000 Paducah SCWE USEC 2000 Portsmouth SCWE USEC 2000 Bethesda SCWE
Good to Very Good	PSEG Nuclear Composite NSC Salem Other Maintenance NSC Salem Radiation Protection SCWE Training NSC Engineering/Tech Support NS VB&P	Diablo Canyon 2001 NSC Diablo Canyon 2000 Operations SCWE USEC 2000 Bethesda NSC
Good	PSEG Nuclear Composite NS VB&P Salem Operations NSC Salem Electrical/I&C Maintenance NSC Salem Other Maintenance NS VB&P Hope Creek Radiation Protection NSC Hope Creek Electrical/I&C Maintenance NSC Hope Creek 12 hr/WIN Maintenance NSC	South Texas Project 2002 GCWE South Texas Project 2002 LMS South Texas Project 2002 ECP South Texas Project 2002 Wackenhut NSC South Texas Project 2002 I&C Maintenance NSC South Texas Project 2002 Mechanical Maintenance NSC South Texas Project 2000 GCWE

Rating	PSEG Nuclear Organizations	Other Nuclear Facilities
	Training NC VB&P Training ECP Engineering/Tech Support ECP	South Texas Project 2000 LMS USEC 2000 Paducah NSC USEC 2000 Portsmouth NSC USEC 2000 Paducah NS VB&P USEC 2000 Bethesda NS VB&P
Adequate to Good	PSEG Nuclear Composite ECP Salem 12 hr/WIN Maintenance NSC Salem Operations NS VB&P Salem Electrical/I&C Maintenance NS VB&P Hope Creek Chemistry NSC Hope Creek Radiation Protection NS VB&P Hope Creek Operations NSC Hope Creek Electrical/I&C Maintenance NS VB&P Hope Creek Mechanical Maintenance NSC Hope Creek 12 hr/WIN Maintenance NS VB&P	South Texas Project 2002 Operations GCWE USEC 2000 Portsmouth NS VB&P
Adequate	Salem Chemistry NSC Salem Radiation Protection NSC Salem Mechanical Maintenance NSC Salem 12 hr/WIN Maintenance NS VB&P Salem Operations ECP Salem Electrical/I&C Maintenance ECP Salem 12 hr/WIN Maintenance ECP Salem Other Maintenance ECP Hope Creek Radiation Protection ECP Hope Creek Mechanical Maintenance NS VB&P	South Texas Project 2002 Wackenhut GCWE South Texas Project 2002 I&C Maintenance GCWE South Texas Project 2002 I&C Maintenance LMS South Texas Project 2002 Mechanical Maintenance GCWE South Texas Project 2002 Mechanical Maintenance LMS South Texas Project 2002 Operations LMS Diablo Canyon Maintenance ECP USEC 2000 Bethesda ECP
Nominally Adequate	Salem Radiation Protection NS VB&P Salem Mechanical Maintenance NS VB&P Hope Creek Chemistry NS VB&P Hope Creek Operations NS VB&P Hope Creek Electrical/I&C Maintenance ECP Hope Creek Mechanical Maintenance ECP Hope Creek 12 hr/WIN Maintenance ECP	South Texas Project 2002 Wackenhut LMS USEC 2000 Paducah ECP
Nominally Less-than-Adequate	Salem Chemistry NS VB&P Salem Radiation Protection ECP	Diablo Canyon 2000 Maintenance Trust in Management
Less-than-Adequate	Salem Chemistry ECP	Diablo Canyon 2000 Operations ECP

Rating	PSEG Nuclear Organizations	Other Nuclear Facilities
	Salem Mechanical Maintenance ECP Hope Creek Chemistry ECP Hope Creek Operations ECP	USEC 2000 Portsmouth ECP
Significantly Less-than-Adequate	None (yet)	

Table Notes:

- 1. ECP Employee Concerns Program
- 2. GCWE General Culture & Work Environment
- 3. LMS Leadership, Management, & Supervisory
- 4. NS VB&P Nuclear Safety Values, Behaviors & Practices
- 5. NSC Nuclear Safety Culture
- 6. SCWE Safety Conscious Work Environment

ALLEGATION NO. 4 – THE SAFETY CULTURE AT SALEM/HOPE CREEK IS INADEQUATE BY INDUSTRY STANDARDS

The NRC's Advisory Committee on Reactor Safeguards (ACRS) held a day-long workshop on safety culture on June 12, 2003. Among the viewpoints heard by ACRS was that of Mr. Chuck Dugger, on loan to the Nuclear Energy Institute from Entergy. Mr. Dugger stated:

*Safety culture starts at the very top of an organization. We all follow the leader. If the leader says that safety is important, then it is. If the leader doesn't say that, then it isn't.*¹⁰

The comments from the Salem/Hope Creek survey clearly indicate that many workers do not believe that leadership is sincere in its proclamations about safety. The results also show a tangible gap between upper management at PSEG and the work force with respect to perspective on conditions at Salem/Hope Creek. Even if PSEG management is sincere about safety, they are clearly not communicating it to the work force.

Mr Dugger also stated:

*Safety must lead all other goals – is a very easy statement to make. And I doubt that you will find any CEO or CNO or site vice president that would say anything else. Almost every nuclear organization has a vision statement, and a high-level goal that states safety is number one.*¹¹

and

*Although the statement is there, it's how the statement is applied that counts. The way senior management behaves will determine how the organization behaves. And it takes more than just a platitude or a value statement to drive an organization. The values must be demonstrated by management.*¹²

The low NS VB&P (Nuclear Safety Values, Behaviors, & Practices) on the recent Synergy survey at Salem/Hope Creek demonstrate that PSEG management's behavior is unacceptable. Based on the Synergy survey results and the NRC's own repeated concerns about the worsening corrective action processes at Salem/Hope Creek, it is abjectly clear that PSEG management behavior is indeed driving the organization, but not towards an acceptable destination.

What is that destination? It is the spot that Millstone's owners spent considerable sums to depart in the 1998-1999 period. Mr. David Collins, a staffer at Millstone, informed the ACRS last June of how Millstone reached that destination:

*Never forget that previous management failed so miserably not because they were not intelligent, not because they did not understand clearly what successful economics look like in a competitive environment; they failed because they were arrogant, dismissive, and refused to listen to the issues and concerns of the people who make this place run.*¹³

These words apply to PSEG management as evidenced by the Synergy survey.

Mr. Collins told the ACRS about a meeting he attended at Millstone in the mid-1990s where management delivered this message:

*We can no longer afford to be a Cadillac, We must become more like a Chevy. If it is not absolutely necessary to do something, it is necessary to not do it. We have to do things differently now to be competitive. If you don't like it, there are 100 people waiting outside the door to take your place. An employee responded at the meeting, "What about company loyalty to employees?" and the CNO responded, "If you want loyalty, I suggest you get a dog."*¹⁴

Many of the comments from the Synergy survey at Salem/Hope Creek in December 2003 expressed this same theme. These comments came from workers in maintenance, security, operations, and other departments demonstrating that they reflect a theme from upper management instead of the misguided/misinformed view of a first-line supervisor.

I personally experienced Mr. Ferland's message. I worked as a consultant to the reactor engineering section at Hope Creek from April 1988 to November 1988. There were banners and floor mats and posters all over the place with the slogan, "World Class by 1995." The goals included getting all 1's in SALP and placing in the top percentiles of the INPO performance indicators. When I returned to Hope Creek in 1989, the floor mats were gone and there were quite literally exposed hooks on the wall where the World Class banners had once hung. Mr. Ferland himself visited the site and conducted a big meeting on a paddle-wheeler that PSE&G had anchored in the Delaware River at the time as their visitor's center. Mr. Ferland's message was that World Class is too costly and SALP 2 or even 3 are okay if it costs too much to upgrade to 1: The message departing that session: "Mediocre is okay, if it's cost-effective." Given those marching orders, it did not surprise me when Salem found itself mired in extended outages in the mid 1990s.

Mr. Lew Myers, senior manager at Davis-Besse, made the following statements to the ACRS:

*The chief operating officer of FENOC was in the containment for the last refueling outage more than most of the managers. He went into containment one time.*¹⁵

and

*Isolationism was experienced throughout the plant, not only isolationism to the industry but between groups. We talked about that today. You know, the team work was missing.*¹⁶

and

*What we found was there's reports in place from years ago that there was a clay layer building between management and the employees.*¹⁷

The comments from the December 2003 survey at Salem/Hope Creek strongly suggest invisible management, a lack of team work, and a clay layer – the prime ingredients in the management fiasco that was Davis-Besse.

Two PSEG corporate senior managers, Mr. Ferland and Mr. Busch, came from Northeast Utilities, the licensee for Millstone. Mr. Ferland came to PSEG in 1986. Mr. Busch came over during the depths of the Millstone saga. Paul W. MacAvoy and Jean W. Rosenthal of the Yale School of Management examined how NU management performed prior to the Millstone debacle. They concluded:

*In the face of the phalanx of recommendations from the four internal task force studies in 1991-1992 for new programs, resources, and priorities for completing the design-based programmatic documentation of the three Millstone plants, there was no substantial injection of resources. There was no management response maximizing attention on resolving operational issues. The development of a process for effective corrective action on system breakdowns was not begun. When major funding was needed for problems, management response was consistently absent. When funding was required, resources were constrained to a minimum.*¹⁸

What didn't work at Millstone in the 1990s is not working at Salem/Hope Creek today.

Mr. Ferland's response to the NRC dated February 13, 2004, boasted of spending \$750 million over the next five years for maintenance and capitol improvements at Salem and Hope Creek. That seemingly large sum is only \$50 million per reactor per year – hardly a significant sum given what Entergy expended annually on each reactor at Indian Point. But whether the cost is \$1 or \$1 billion, it is insufficient unless the performance at Salem and Hope Creek turns around and sustains an improving trend.

Time for Charlie Brown to Kick the Football

There are ample signs that conditions at Salem/Hope Creek are getting worse. You've seen it and we've seen it before, as the US General Accounting Office explained in May 1997:

NRC has been concerned with Salem's regulatory performance since January 1990 when Salem was first discussed at its Senior Management Meeting. NRC discussed the plant seven additional times before it listed Salem on its Watch List in January 1997. NRC's records document numerous conditions that demonstrated poor management of the plant, including the operations outside of its design bases for extended periods of time. The units are currently under an NRC Restart Action Plan (RAP) that requires the licensee to correct a long list of technical and programmatic issues to bring about long-term performance improvement prior to receiving NRC's approval to restart. The plan was developed after PSE&G shut down the units in mid-1995. Salem's main problems included long-standing problems in performance and equipment failures, units that are operated outside of their design bases, and weak management by the licensee. NRC's lack of more aggressive action on these problems when they were first reported compounded the worsening condition of the Salem units.¹⁹

As UCS expressed to the NRC Chairman and Commissioners on February 2, 2004, NRC Region I deserves recognition for its intervention in the worsening conditions at Salem/Hope Creek. The current reactor oversight process stresses the importance of safety culture, but provides little means to detect an unacceptable safety culture and respond before it adversely affects safety levels.

Finding a problem and fixing it are two distinct tasks. What is needed is "more aggressive action" by the NRC. The January 28, 2004, letter was a positive step. But PSEG predictably reacted by side-stepping the matter. They failed to provide NRC with complete information on the depth of the safety culture problems. Instead, they seek to placate the NRC with plans and promises of a better future.

There is compelling evidence that the safety culture at Salem/Hope Creek is worse than that at Davis-Besse last year. If NRC Region III could use safety culture concerns to prevent Davis-Besse's restart, then NRC Region I could equally use safety culture concerns to require Salem and Hope Creek to shut down. As a minimum, UCS strongly suggests that NRC order PSEG to demonstrate tangible improvement in the safety culture at Salem/Hope Creek, particularly in the areas of corrective actions and Employee Concerns, within six (6) months or incur the shut down of all three reactors until such improvement can be made.* We believe that such an order would rapidly shift PSEG from its plans and promises to real measures to correct the safety culture. The comments from the December 2003 survey express again and again that PSEG is good at identifying problems, but weak at fixing them. The worsening conditions at Salem/Hope Creek do not provide indefinite time for PSEG to iterate through a series of ineffective corrective actions as this same site did prior to the extended Salem outages in the 1990s. The six-month deadline provides PSEG ample time to stem the decline and show an improving trend. If PSEG is unable to demonstrate improvements in that time, that failure with so much on the line would provide NRC with overwhelming evidence of management ineptitude. The inability to implement effective corrective actions would be a violation of 10 CFR Part 50, Appendix B, Criterion XVI and sufficient grounds for shut down of all three reactors.

Sincerely,

<ORIGINAL SIGNED BY>

David Lochbaum
Nuclear Safety Engineer
Washington Office

* Although this suggestion resembles a request made pursuant to 10 CFR 2.206, UCS is not petitioning the NRC.

Enclosures (on CD):

- 1) Synergy roll-up results from December 2003 survey at Salem/Hope Creek
- 2) Synergy detail results from December 2003 survey at Salem/Hope Creek
- 3) Davis-Besse safety culture report from March 2003

Sources:

¹ Nuclear Regulatory Commission, Special Inquiry Group, "Three Mile Island: A Report to the Commissioners and to the Public," Vol. II, Part 1, pp. 149-150.

² The President's Commission on The Accident at Three Mile Island, "The Need for Change: The Legacy of TMI," Pergamon Press, October 1979, p. 8.

³ The President's Commission on The Accident at Three Mile Island, "The Need for Change: The Legacy of TMI," Pergamon Press, October 1979, p. 9.

⁴ Letter dated October 2, 2002, from John A. Grobe, Nuclear Regulatory Commission, to Lew W. Myers, FirstEnergy Nuclear Operating Company, "Davis-Besse Nuclear Power Station NRC Augmented Inspection Team Follow-up Special Inspection Report No. 50-346/02-08(DRS)."

⁵ Nuclear Regulatory Commission, Management & Human Performance Inspection Team, Presentation Slides, December 19, 2003.

⁶ Nuclear Regulatory Commission, Briefing, Davis-Besse Lessons Learned, February 26, 2004.

⁷ Mario V. Bonaca, Chairman ACRS to Diaz, "Safety Culture," July 16, 2003.

⁸ FirstEnergy letter to Nuclear Regulatory Commission dated April 23, 2003, "Submittal of the Report Titled "Safety Culture Evaluation of the Davis-Besse Nuclear Power Station," dated April 14, 2003."

⁹ South Texas Project Nuclear Operating Company letter to Nuclear Regulatory Commission dated October 26, 2000, "South Texas Project Units 1 and 2 Docket Nos. STN 50-498, 50-499 South Texas Project Comprehensive Cultural Assessment," and

South Texas Project Nuclear Operating Company letter to Nuclear Regulatory Commission dated April 17, 2002, "South Texas Project Units 1 and 2 Docket Nos. STN 50-498, 50-499 South Texas Project Comprehensive Cultural Assessment," and

Pacific Gas and Electric Company letter to Nuclear Regulatory Commission dated February 25, 2000, "Diablo Canyon Safety Culture Survey Results and Alleged Discrimination (2000-ERA-3)," and

Pacific Gas and Electric Company letter to Nuclear Regulatory Commission dated May 31, 2001, "Results of 2000 Safety Culture Survey," and

United States Enrichment Corporation letter to Nuclear Regulatory Commission dated February 2, 2001, "Paducah Gaseous Diffusion Plant (PGDP) Portsmouth Gaseous Diffusion Plant (PORTS) Docket Nos. 70-7001 and 70-7002 2000 Comprehensive Cultural Assessment."

¹⁰ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 31, lines 10-13.

¹¹ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 32, lines 19-24.

¹² Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 33, lines 3-8.

¹³ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 113, lines 22-25 and page 114, lines 1-4.

¹⁴ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 114, lines 9-18.

¹⁵ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 252, lines 6-9.

¹⁶ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 253, lines 14-17.

¹⁷ Nuclear Regulatory Commission, Advisory Committee on Reactor Safeguards, Transcript, June 12, 2003, page 255, lines 4-6.

¹⁸ Paul W. MacAvoy and Jean W. Rosenthal of the Yale School, "The Strategic Destruction of Northeast Utilities," April 2001.

¹⁹ United States General Accounting Office, GAO/RCED-97-145, "Nuclear Regulation: Preventing Problem Plants Requires More Effective NRC Action," May 1997.