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AFFILIATION:

ADDRESSEE: CHRM Allison Macfarlane, et al.

SUBJECT: Concerns book that exposes Commission's botched LR Process.

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From: Macfarlane, Allison
Sent: Friday, February 15, 2013 9:54 AM
To: Niedzielski-Eichner, Phillip; Astwood, Heather
Cc: Vrahoretis, Susan; Schwartzman, Jennifer; Woollen, Mary
Subject: Fwd: Book Exposes Commission's Botched LR Process
Attachments: Appendix J.PDF; ATT00001.htm

FYI

Begin forwarded message:

From: Charles Eccleston <ecclestonch2@gmail.com>
Subject: Book Exposes Commission's Botched LR Process
Date: February 14, 2013 9:44:22 PM EST
To: <Allison.Macfarlane@nrc.gov>, <William.Magwood@nrc.gov>, <Kristine.Svinicki@nrc.gov>, <George.Apostolakis@nrc.gov>, <William.Ostendorff@nrc.gov>, <Rodolfo.Rivera@nrc.gov>

Ms. Allison Macfarlane

As promised, my first book, *Inside Energy*, was published nearly a year ago. Much more is on the way. This energy book exposes NRC's deceptive and tainted license renewal process. It has been purchased by thousands of the public and professionals within the energy industry. Many professionals and public citizens are contacting me to share their concerns and even fears regarding NRC's deceptive practices exposed within this book.

It is most unfortunate that such matters must have to be openly and loudly aired to the public. There are ways to improve the system discretely without compromising NRC's professional standing and reputation.

Regards,

Charles Eccleston

Appendix J: The Fukushima Daiichi nuclear power plant disaster

The recent disaster of the Japanese Fukushima Daiichi power station (five nuclear reactors, three of which experienced partial meltdowns spewing radiation across much of the island) highlights the importance of rigorously investigating the impacts of any major energy proposal. A failure in EnMS planning and decision-making will almost certainly lead to poor results, if not dangerous decisions. The following case study illustrates how a misdirected planning process can lead to misdirected or failed decision-making.

How can future catastrophes be avoided? At the heart of the ISO 50001 energy management system (EnMS), lays the planning and decision-making process. An EnMS can offer an additional safety factor that can help compensate for flawed decisions or inherently poor management practices.

Performed properly, the EnMS planning process can lead to a significant reduction in energy consumption, cost savings for the organization, and improved environmental quality for the public.

Nuclear power license renewal

Most experts would agree that nuclear energy is potentially one of the most dangerous technologies in the world. The U.S. NRC's Division of License Renewal (DLR), directed by Brian Holian, is currently working full-speed ahead in re-licensing (more accurately referred to as "license renewal" or LR for short) an entire generation of aging reactors based on antiquated technological designs.

The existing fleet of U.S. nuclear reactors was originally licensed for a 40-year period. These licenses are expiring or nearing expiration.

The purpose of LR is to extend these licenses by an additional 20-year period, thus extending the operating window to 60 year period.

Given the priority and urgency at which the NRC is moving ahead with its re-licensing program, the entire fleet of antiquated nuclear reactors will be re-licensed within the next few years. What concerns critics is that the NRC performs a fast-paced and carefully choreographed process designed to show that the potential impacts of re-licensing an aging nuclear reactor are essentially benign. And this charge is reinforced by the following fact. Never—not even in a single case—has an aging reactor been denied a renewed operating license. As one NRC employee quipped, “No LR has been rejected, and I will be surprised if an application is ever rejected.”¹

The NRC’s Division of License Renewal is responsible for issuing renewed licenses for the aging fleet of reactors. DLR’s project branch (RPB1), under the direction of Bo Pham, is currently responsible for preparing the safety evaluation report and environmental impact statement (EIS) for re-licensing these aging nuclear power reactors. But, here lies the problem.

When an energy program has a troubling culture

DLR has suffered from morale problems and its own project managers (PMs) have complained of management and safety-related issues. The DLR morale problems became so significant that a decision was made to hold two focus group meetings to determine the root of these problems. An independent company was hired to facilitate these meetings. One was held to assess the opinions of DLR’s project managers (PM) who are responsible for preparing the EIS (technically, a supplemental EIS) and safety evaluation report for re-licensing particular plants. The project managers’ meeting was described as “somber.” The DLR PMs were not shy about voicing critical and sometimes scathing comments. A summary of the comments includes the following:¹

These are indeed serious allegations. But particularly disconcerting comments were those such as that managers are “bypassing the regulatory process and compromising the safety mission to impress upper management” and that DLR is “sacrificing quality for schedule.” The results of the focus group meeting were not released to the DLR staff, let alone the public. Perhaps for good reason, Brian Holian never mentioned the results of the PM focus group to the DLR staff.

Perhaps more troubling, the chilling comments depicted in Table J.1 were not lodged by outside antinuclear critics, but by the very DLR PMs responsible for preparing the safety evaluations and EISs for reissuing the licenses. This deepens concerns. The managers are a vital part of the LR quality assurance process. For example, both Holian and Pham are

responsible for reviewing these EISs and safety evaluations and signing-off on their accuracy, rigor, and thoroughness. If DLR "... managers don't listen ... act like know-it-all's," "are arrogant," are "schedule driven" with "dominant personalities," and make "poor management decisions," who is going to act as the critical stop-gap to ensure that a LR has been adequately investigated?

When energy schedules override public safety

As just witnessed, NRC's own PMs have charged that DLR is "sacrificing quality for schedules." The NRC has officially stated that an LR review be completed within an 18-month period. Schedules are now closely scrutinized and reported to upper management, to ensure that they meet the contrived 18-month schedule.

Now compare these management practices to the Japanese Fukushima nuclear disaster. Japan's experience clearly illustrates what can happen when schedules and sloppiness trump the quality of safety and environmental assessments.

NRC prepares an EIS for each license renewal it grants to an aging reactor plant. The EIS considers alternatives to license renewal; however, the public is often surprised to learn that none of these alternatives, not even the no-action alternative, have ever been given serious decision-making attention. Chapter 5 of the LR EIS (technically a supplemental EIS) investigates "severe accidents" of a nuclear accident. The EISs produced under the direction of the RPB1 management have routinely concluded that the risk from sabotage and beyond design-basis earthquakes (earthquakes the reactor is not designed to withstand) at existing nuclear power plants is "small." With respect to the assessment of a severe accident, Chapter 5 of the LR EIS have routinely stated that, "The probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to groundwater, and societal and economic impacts from severe accidents are small for all plants." This is it. This is all the public and stakeholders get. Perplexed?

So how does DLR management justify the assignment of a "small" impact to a potential nuclear reactor accident? It employs a mathematical 'trick.' What RPB1 management cleverly does is to take the probability (which NRC argues is small), multiply it by the consequences (assume it is large), and then conclude that the human, environmental, and socio-economic impacts are small because the probability is so small. But let us step back for a moment and reframe the context of this problem. The EIS runs for hundreds of pages, examining every conceivable impact, from air emissions to water usage. Then, when it comes to a real issue. The issue that lies is at the heart of the licensing process. The issue of most concern to the public and supposedly at the center of the LR decision (i.e., the

issue of safety and the potential consequences of an accident), it provides nothing but a cursory dismissal of the potential impact and a scant conclusion that the consequences of a large-scale accident would be "small"! Obviously DLR and RPB1 management is going to great lengths to avoid having to focus on the real issue that could kill the issuance of renewed nuclear operating license.

Let's reconsider the context of the DLR's decision-making process once more. Are the impacts of a potential accident that could result in direct radiation deaths, birth defects, evacuation of tens of thousands of down-winders, and near-permanent contamination of thousands of square miles "small"? Were the consequences of Chernobyl, Three Mile Island, and more recently the Japanese Fukushima Daiichi power station disaster "small"? If the probability of an accident is as small as the RPB1 manager appears to be claiming it is, why have there been four other near-catastrophic accident (near misses) in the United States, in addition to Three Mile Island? Again it is obvious that NRC management is going to great lengths, obscuring the facts, to avoid having to announce to the public and stakeholders that the impact of a nuclear accident could result in catastrophic human, environmental, and socioeconomic repercussions, as great or perhaps even greater than that experienced by Chernobyl or Japan.

A re-review of license renewal?

Given the management practices just described, what does such behavior say about DLR licenses that have already been issued? How many of these completed license renewals have suffered from a flawed process simply to meet licensing goals? Has RPB1 management already re-licensed a ticking time bomb? The answer is that nobody knows. A catastrophic meltdown may be next week or ten years from now. Some experts state that the impacts could be so severe that a major city or half a state could be 'lost.' It will require a full and comprehensive review of every renewed license issued to date to even remotely begin to answer this question. Every day that an aging reactor runs with a perhaps flawed license renewal puts the public that much closer to a U.S. version of Chernobyl or perhaps Fukushima Daiichi. Imagine having to permanently evacuate the population of a major city and contaminating the better part of an entire state? Sooner or later the public we begin to understand how safety and accident issues have been twisted and obscured. It may be only a matter of time before Congress begins asking some very tough questions.

The goal of securing the environment and public health can only be guaranteed when an organization is truly committed to such a goal. A process designed to rubberstamp licenses on the shortest possible schedule possible will ultimately leave major question marks for the society

that must live with the consequences of such decisions. No management system, regardless of how well conceived, including ISO 50001, will make up for a façade, or an ill-conceived or slipshod energy licensing process. Nor can it completely compensate for poor management and decisions. However, when combined with a serious planning and assessment process it can at least help mitigate potential hazards that may result from ill-conceived or slack practices. An ISO 50001 can also be used to seriously investigate alternatives to unsafe technologies. It is to this end that this book has been written and dedicated.

In one license renewal project, two independent and separate projects were combined into a single project, for which a single safety evaluation and EIS were prepared. These projects (three plants in total) involved different types of plants, with different cooling systems, and different types of impacts; this complicated the process and substantially increased the amount of work required to complete the review. As manager of RPB1, Pham was warned by multiple sources that EIS could not be adequately completed within a contrived 18-month period. These warnings went unheeded. Consistent with some of the comments depicted in Table J.1, the RPB1 manager refused to listen and became agitated at being told that the EIS could not be completed on such a contrived schedule. As predicted, the project schedule began to slide. To reduce the slippage, this manager ordered the EIS contractor to stop further work. This was done despite the fact that the EIS contractor warned that the EIS was plagued with significant errors and inaccuracies. The EIS contractor appealed for more time to flush out errors and prepare a more thorough and accurate analysis. This feedback was disregarded. All of this was done, simply so that the EIS could be pushed out to the public to achieve the contrived schedule. In response to complaints that the EIS was plagued with errors, the RPB1 manager stated that “We’ll fix it up later during the final EIS stage!”¹

Table J.1 Summary of Key Statements made during the Project Manager Focus Group Meeting

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- Some of the DLR managers are “very condescending.”
 - Managers are “bypassing the regulatory process and compromising the safety mission to impress upper management.”
 - “Poor management decisions” are being made.
 - DLR “Managers don’t listen—they act like know-it-alls.”
 - DLR “Managers are arrogant.”
 - There are “strained relations” between PMs and management.”
 - Managers are “schedule driven” and have “dominant personalities” (i.e., they place pressure on PMs to shortcut the process).
 - DLR is “sacrificing quality for schedule.”
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¹ Personal Communications. Names withheld (2010).

But this is not the end of the story. The license renewal is a dual process consisting of (1) the EIS and (2) a safety evaluation to ensure that the plant can be safely operated for an additional 20-year period. At one point, the former safety project manager for this LR project (who asked to be relieved from the project in disgust) indicated that the safety evaluation was at least 4 and probably 6 months behind schedule, and continuing to slide even further behind schedule.¹ However, through managerial intimidation and shortcuts, the RPB1 manager was able to push the safety evaluation through the LR process and eliminate much of the delay. The safety review process was short circuited and failed to receive the sufficiently rigorous scrutiny that is normally expected to ensure that an aging plant can be operated safely for an additional 20 years. Again, this was done to meet a contrived project schedule in a vain attempt to impress upper management.

Evaluating the unevaluated

Under the U.S. National Environmental Policy Act (NEPA), an EIS is prepared to rigorously investigate the impacts of proposed actions and alternatives so that the public and decision-makers understand the full implications of taking an action that may significantly “affect the quality of the human environment.” Chapter 5 of the LR EIS (technically a supplemental EIS) investigates “severe accidents” of a nuclear accident. The EISs produced under Pham’s direction routinely conclude that the risk from sabotage and beyond design-basis earthquakes at existing nuclear power plants is “small” and that the risks from other external events are adequately addressed by a generic consideration of internally-initiated severe accidents. With respect to the assessment of a severe accident, Chapter 5 of the LR EIS routinely states that:

The probability weighted consequences of atmospheric releases, fallout onto open bodies of water, releases to ground water, and societal and economic impacts from severe accidents are small for all plants.

This is all we get? Perplexed? Well, you are not alone. Pick up any LR EIS and turn over to Chapter 5 with its accompanying appendix (usually Appendix F) and read for yourself. So how does DLR management justify the assignment of a “small” impact to a potential nuclear reactor accident? It employs a mathematical ‘trick.’ What Pham’s EISs cleverly do is to take the probability (which NRC argues is small), multiply it by the consequences (assume it is large), and then conclude that the human, environmental, and socioeconomic impacts are small because the probability is so small. But let us step back for a moment and reframe the context of this problem. The EIS runs for hundreds of pages, examining every

conceivable environmental impact, from air emissions to water usage. Then, when it comes to a real issue that lies at the heart of both the public and, supposedly, the LR decision (i.e., the issue of safety and the potential consequences of an accident), it provides nothing but a cursory dismissal of the potential impact and a scant conclusion that the consequences of a large-scale accident would be "small"!

Recall that the purpose of an EIS is to inform the decision-maker and public so that "informed decisions can be made." Are the impacts of a potential accident that could result in direct radiation deaths, birth defects, evacuation of tens of thousands of down-winders, and near-permanent contamination of thousands of square miles "small"? Were the consequences of Chernobyl, Three Mile Island, and more recently the Japanese Fukushima Daiichi power station disaster "small"? If the probability of an accident were so small, why have there been four other near-misses in the United States (in addition to Three Mile Island)? Perhaps more pointedly, if the impacts are really so small, why was the U.S. president and the nation in near-panic for days during the Three Mile Island accident? Was this because the potential impacts were "small"? Holian and Pham are clearly going to great lengths, obscuring the facts, to avoid having to announce to the world that the impact of a nuclear accident could result in enormous human, environmental, and socioeconomic repercussions.

A re-review of license renewal?

The DLR management is directly responsible for ensuring the completeness, accuracy, and thoroughness of the license renewal reviews. A management process that is "sacrificing quality and safety to meet schedules" and "poor management" is a dangerous formula, indeed. Given the practice just described, what does such behavior say about DLR licenses that have already been issued? How many of these completed LR projects may have suffered from a similar flawed process? Has RPB1 already re-licensed ticking time bombs? The answer is that nobody can be certain. It may require a full review of the renewed licenses issued to date to even remotely begin to answer this question. Every day that one of these aging reactors runs with a perhaps flawed license renewal puts us that much closer to a U.S. version of Chernobyl or perhaps Fukushima Daiichi. Imagine having to move the population of a major city and contaminating the better part of an entire state.

So what is the connection between the NRC's LR process and an ISO 50001 EnMS? Nations around the world have adopted environmental impact assessment processes, similar to that of the U.S. EIS procedure to evaluate the implications of taking a particular course of action. When the results of such a rigorous investigation or other similar planning and assessment processes are combined with an ISO 50001 EnMS, an

organization has a powerful means of determining appropriate actions to take that can significantly reduce energy consumption while also minimizing the environmental footprint. But this goal can only be realized if the organization has performed an objective and rigorous assessment of the impacts and alternatives. A planning process that lacks rigor and objectivity cannot be expected to significantly contribute to the goal of reducing energy consumption and associated costs, or diminishing the environmental footprint.