

June 28, 2002

MEMORANDUM TO: William D. Travers
Executive Director for Operations

FROM: James W. Johnson, Special Assistant to the Director */RA/*
Office of Nuclear Regulatory Research

SUBJECT: DIFFERING PROFESSIONAL OPINION (DPO) CONCERNING THE
SIGNIFICANCE DETERMINATION PROCESS

In a memorandum to you, dated March 15, 2002, Troy W. Pruett, Senior Reactor Analyst, Region IV, expressed his Differing Professional Opinion (DPO) regarding the Significance Determination Process (SDP). Mr. Pruett identified what he believed to be mis-characterizations in the memorandum responding to his differing professional view (DPV), and requested that an independent review of the issues outlined in the DPV be completed. The response to the DPV is provided in a memorandum dated February 18, 2002, from Samuel J. Collins to Troy W. Pruett.

By your memorandum dated April 9, 2002, you appointed David J. Nelson of the Office of Enforcement and myself as Chairman to an Ad Hoc DPO Panel to review Mr. Pruett's DPO. William B. Jones of Region IV was appointed by me as the third member of the panel from a list of three individuals provided by Mr. Pruett.

The Ad Hoc DPO Review Panel (DPO Panel) conducted interviews with Mr. Pruett and selected NRC management and staff familiar with the development and implementation of the Reactor Oversight Process (ROP) and specifically the SDP. The DPO Panel reviewed the issues and recommendations identified in the DPV and those issues which Mr. Pruett had identified as mis-characterizations in the DPV response. In addressing these issues and recommendations, the DPO Panel reviewed a collection of documents compiled by the Ad Hoc DPV Panel on related issues, and a number of additional documents identified and obtained through personnel interviews.

The DPO Panel found that Mr. Pruett had a comprehensive understanding of the reactor oversight program and the SDP implementation. Mr. Pruett's issues and recommendations identified in the DPV were based on his comprehensive understanding, and his involvement in benchmarking activities associated with the SDP. Overall, the DPO Panel generally agrees with the findings and recommendations from the DPV Panel. However, the DPO Panel is concerned with the current state of the Phase 2 notebooks, the promotion of the Phase 2 notebooks based on its espoused future capabilities and benefits of the process which to date have not been demonstrated, and an apparent lack of a long term vision to identify and develop the best Phase 2 assessment tool. The DPO Panel is also concerned that the benefits of the notebooks (gain risk insights) are being diminished as the complexity of the notebooks increases. Increased complexity of the notebooks is resulting in a "cookbook" implementation approach by the inspectors. The DPO Panel did find that NRC management and staff are in

the process of addressing many of the Ad Hoc DPV Panel's observations and recommendations in the SDP Improvement Initiative. The interests of stakeholders are being considered in decisions involving this initiative.

A report prepared by the DPO Panel is attached and provides an evaluation of the concerns raised in the DPO as well as those issues and recommendations raised in the DPV. In an effort to address these fundamental concerns, the DPO Panel makes the following recommendations.

1. **The DPO Panel strongly supports the DPV Panel's recommendation of an overall review of the SDP.** In addition, management should provide a transitional vision for the SDP to consider changes to the methodologies and tools available to assess safety significance. While we do not agree that the SDP process should be abruptly stopped at this point, we do agree that a vision should include a performance expectation for the process tools utilized. If more than one assessment tool is required, their range of applicability should be clearly articulated. An alternate approach to the plant specific notebooks could be the standardized plant analysis risk (SPAR) models. The DPO Panel heard much discussion on this issue. We concluded that with an improved interface, the SPAR models could be made user friendly and have the potential to produce an output in a format consistent with the output of the notebooks and make a significant improvement in the quality of the analysis performed to assess the safety significance of inspection findings. However, there needs to be an increased emphasis on the development of the SPAR user interface software. The DPO Panel noted that SPAR models can be readily applied to those issues which can be evaluated by the notebooks.
2. **The SDP should incorporate uncertainty analysis in the inspection finding assessments when important decisions are being made.** This does not imply that uncertainty analysis would be required for findings of very low safety significance. However, uncertainty analysis would help to make the process more consistent with the Commission PRA Policy Statement and allow for better risk-informed decision-making. It is difficult to ascribe meaning to the point estimates that are derived using the plant-specific notebooks. With order of magnitude approximations for the unavailability of systems and components and the large uncertainties associated with the unreliability of human actions, questions regarding the efficacy of comparing delta core damage frequencies on the order of 1E-6 and 1E-5 naturally arise.
3. **Criteria for benchmarking the SDP should be subjected to peer review, and include validation of sequences and cutsets within licensee and NRC plant specific models and should involve individuals with statistical and PRA expertise.** One would expect that competing tools (licensee plant specific model, notebooks, and SPAR) would not only yield core damage frequencies in the same range but would also identify the same dominant accident sequences to core damage, but this has not always been the case. If at the same time, the SDP process is being benchmarked against licensee probabilistic risk assessments (PRAs), there should be some independent review of the licensee's PRA. In addition, we have to be sure that we are comparing corresponding point estimates. It is not clear that this is possible unless we know how to characterize the results coming out of the SDP. Various point estimates can differ by

orders of magnitude. Also, the benchmarking will have to be a continuous process because the plant is changed and consequently, PRA models have to change.

A comparative analysis of competing tools could be performed using standard problems designed to assess the performance of the assessment tools. With any tool, it will always be possible to conclude that a particular inspection finding was risk significant (as defined by the decision criteria) when in fact this is not the case (over estimating risk significance). In a like manner, it is always possible that a particular inspection finding will be declared not to be risk significant when it is risk significant (underestimating risk significance). Both of these situations result in errors and it is not possible to force these error rates to zero. However, the assessment tool that minimizes these probabilities of error would tend to be more desirable from a decision-making point of view. Much is being done to improve the timeliness, effectiveness, and efficiency of the SDP process but there seems to be less proportionate amount of effort focused on improving the quality of the analysis.

- The SDP process should be implemented consistently across the regions.** The DPO panel recognizes that Manual Chapter 0609 was recently revised to address this issue. However, there needs to be an accepted implementation standard that recognizes the tools, their efficiency in evaluating inspection findings, and other risk information available to both the inspectors and the senior reactor analyst.

Attachment: As stated

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 W. Kane, DEDR
 J. Craig, AO

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REPORT OF THE AD HOC DPO REVIEW PANEL

FOR THE
DIFFERING PROFESSIONAL OPINION CONCERNING THE
SIGNIFICANCE DETERMINATION PROCESS

Introduction

In a memorandum dated November 8, 2001, the differing professional view (DPV) of Troy Pruett (Attachment 1), Senior Reactor Analyst, Region IV, was forwarded to the Director of the Division of Reactor Safety in Region IV. The DPV expressed concerns about the performance of the Significance Determination Process (SDP) Phase 2 Analyses. An Ad Hoc Review Panel, appointed by the Regional Administrator by memorandum dated November 16, 2001 (Attachment 2), was formed to review the DPV and make appropriate recommendations. The AD Hoc Review Panel made an assessment of the DPV and documented its findings in a report entitled, "Differing Professional View on Significance Determination Process (SDP) AD HOC Review Panel," to Ellis W. Merschoff, Regional Administrator Region IV, dated January 10, 2002 (Attachment 3). Mr. Merschoff forwarded the report to Samuel J. Collins, Director, Office of Nuclear Reactor Regulation for his consideration and appropriate action. Since the follow up actions for the DPV lie with NRR rather than Region IV, Mr. Merschoff requested that Mr. Collins respond to the DPV report. In a memorandum dated February 18, 2002, (Attachment 4) Mr. Collins informed Mr. Pruett of the results of the review of his DPV. Mr. Pruett had several concerns with the memorandum he received from Mr. Collins and expressed these concerns to William D. Travers, Executive Director of Operations (EDO) (Attachment 5). The EDO convened an ad hoc review panel and appointed James W. Johnson as chairperson and David J. Nelson as a second technically qualified panel member. The third panel member, William B. Jones, was selected from a list of three names provided by Mr. Pruett.

SDP Background

Significance Determination Process

The purpose of the SDP, as described in Manual Chapter 0609 is to aid inspectors and staff in determining the safety significance of inspection findings, using risk insights where appropriate. The SDP uses a probabilistic framework for identifying potentially risk-significant issues within the initiating events, mitigation systems, and barrier cornerstones. The objectives of the process are to:

1. Characterize the significance of an inspection finding for the NRC licensee performance assessment process, using risk insights as appropriate
2. Provide all stakeholders an objective and common framework for communicating the potential safety significance of inspection findings
3. Provide a basis for assessment and/or enforcement actions associated with an inspection finding

The plant-specific reactor safety SDP uses a graduated, three-phase process to differentiate inspection findings on the basis of their risk significance. Phase 1 of the SDP provides a characterization of the finding and an initial screening of very low safety-significance findings for disposition by the licensee's corrective action program. Phase 2 of the SDP provides an initial approximation of the risk significance of the finding and develops the basis for the significance determination. The Phase 2 SDP is performed using plant-specific risk-informed inspection notebooks which are developed for each nuclear plant. These notebooks contain plant-specific worksheets used by the inspectors to determine the safety-significance (color) of the inspection finding. Phases 1 and 2 of the SDP are intended to be accomplished primarily by inspectors and their supervisors or managers. Phase 3 of the SDP is a review and, as needed, refinement of the risk significance estimation results from Phase 2, which is performed by an NRC risk analyst. A Phase 3 evaluation is performed for inspection findings which cannot be evaluated using the plant-specific risk-informed Phase 2 notebooks.

Several NRC senior managers and staff have envisioned a goal of the reactor safety SDP is to be able to come to an independent safety assessment without reliance on the notebooks. Several NRC managers and staff believe that the notebooks are the best tool currently available, to assess the Phase 2 risk significance of an inspection finding. At the time the SDP was implemented, NRC management and staff envisioned the notebooks being in place to support the Phase 2 evaluations. The Ad Hoc Differing Professional Opinion Review Panel (DPO Panel) notes that the SDP has been in place for approximately two years without benchmarked notebooks to support the Phase 2 evaluations.

NRC management has stated that the Reactor Oversight Process (ROP) should establish independence in its safety assessments. Initially, the standardized plant analysis risk (SPAR) model development lagged behind the notebook development. Subsequently, the development of the SPAR models surpassed the development of the notebooks. In addition, the quality of the notebooks were not adequate to support independent Phase 2 evaluations. Currently, there are approximately 18 of the 77 notebooks that have been benchmarked and were expected to be suitable for Phase 2 applications. However, the last benchmarking efforts (in at least one case) appear to have resulted in additional over and under estimation of risk significance using Revision 1 notebooks.

A concern expressed by NRC management and staff is the need for Phase 2 SDP tools to better evaluate large early release frequency, fire and shutdown risk. Extensive risk analyst time is consumed on these issues, which are not readily addressed by SPAR or notebooks, at the expense of assisting inspectors with developing inspection risk insights. Currently, many safety insights are being obtained through the licensee's models and summary documents which have not been subjected to NRC detailed reviews.

Senior Reactor Analysts (SRAs) are relied on extensively for Phase 2 reviews and to verify proper use of notebooks. Recent training on the notebook rules has been provided to the inspectors and the overall implementation of the notebooks has improved. A lesson learned was the need to provide refresher training on the notebook usage as well as training for individuals unfamiliar with the notebook usage, such as new inspectors. There are also many other issues such as control rod ejection and reactivity addition on which additional guidance is needed.

Scope of DPO Panel review

The DPO Panel reviewed the issues and recommendations identified in the DPV and those issues Mr. Pruett identified as “mischaracterizations” in the DPV response.

Differing Professional View

From Mr. Pruett’s perspective, NRC management in NRR believes that the SDP Phase 2 process provides an adequate assessment of inspection findings and effectively utilizes staff resources. In Mr. Pruett’s memorandum to Mr. Arthur Howell, III, dated November 8, 2001, he provided the following differing views:

1. The Phase 2 SDP does not ensure safety
2. The Phase 2 process is inefficient and ineffective
3. The Phase 2 process places a regulatory burden on the licensee
4. The NRC does not need two separate assessment tools

In addition to the differing views, Mr. Pruett makes the following recommendations for interim actions:

1. Discontinue the use and development of the at-power and shutdown Phase 2 notebooks
2. Development of the SPAR models should be suspended until the NRC has developed an integrated position on what the SPAR model should be able to accomplish. This step is necessary to prevent incremental and costly modifications of the model
3. Evaluate which assessment tool/method will result in the most accurate result with the best use of resources. The NRC needs to stop expending resources until a plan is developed which articulates what tools are needed, what the tools should be able to accomplish, what will be necessary to develop the tools, and when the tools should be available to the staff
4. Obtain current importance measure tables for each facility findings. These tables already exist as a part of the licensees’ PRA models
5. Develop a standard methodology for completing all types of Phase 3 analyses
6. Fully integrate the use of individuals which have completed advanced risk training

DPV Panel Findings

The Ad Hoc DPV Panel felt that it was not appropriate or possible, in the short time period available to try and definitely address each of Mr. Pruett’s concerns and recommendations. However, the panel did believe that he raised a number of valid concerns that should be addressed. As such, the DPV panel’s primary recommendation was that the program office undertake a comprehensive review of the overall progress of the SDP program to date and future program direction.

In regard to Mr. Pruett's recommendations for actions, the DPV panel disagreed with the first two recommendations, although the panel viewed many of the concerns which lead to the recommendations as being valid and generally agreed with the last four recommendations for action.

Differing Professional Opinion

Responsibility for the disposition of the DPV was transferred to the Office of Nuclear Reactor Regulation (NRR) on February 4, 2002 (Attachment 6). The results of the NRR review were forwarded to Mr. Pruett in a memorandum dated February 18, 2002, from Samuel J. Collins, Director of NRR.

Mr. Pruett recommended that an independent review of the concerns outlined in the DPV be completed and identified what he believes are mischaracterizations in Mr. Collins' memorandum of February 18, 2002. The mischaracterizations highlighted in Mr. Pruett's DPO are:

1. "These notebooks were independently developed..."
2. "Notwithstanding the ongoing challenges, the Phase 2 site specific risk-informed inspection notebooks..."
3. "...there are substantial benefits to be gained from using the notebooks."
4. "Therefore, I do not agree with the central recommendation of the DPV to discontinue use of the phase 2 plant specific risk-informed inspection notebooks."

Mr. Pruett also identified a concern with the inspection program branch sponsoring the Ad Hoc DPV Panel independent SDP review. Lastly, Mr. Pruett believes that guidance needs to be developed as to when a Phase 3 analysis should be performed.

Ad Hoc DPO Review Panel Evaluation of DPO Issues

The DPO Panel considered each of Mr. Pruett's DPV concerns and recommendations. The DPV panel performed an overall evaluation of the DPV concerns. The DPO panel agreed with the overall analysis performed by the DPV panel and its response to Mr. Pruett's recommendations.

The DPO Panel agrees that the current version of the Phase 2 notebooks can result in underestimation of an inspection finding's safety-significance. However, as Mr. Pruett indicated, there are substantial oversight and reviews performed to verify Phase 2 notebook safety assessments. The DPO Panel, therefore, concluded that the SDP, in its entirety, appropriately addresses the safety significance of inspection findings. NRR has established a focus group of internal stakeholders to evaluate and make recommendations regarding improvements to the SDP, where appropriate. In order to address the identified challenges with implementation of the SDP, NRR has also developed a comprehensive set of strategies with an associated implementation plan. The strategies and plan should provide for continued improvements in the timeliness, consistency, and usefulness of the SDP tools and should result in greater effectiveness of the SDP.

The DPO Panel found that the state of the Phase 2 plant-specific notebooks for the past 2 years has not supported either efficiencies or effectiveness of the Phase 2 reviews. The ROP has been in existence for approximately 2-years, however, the Phase 2 notebooks require extensive SRA oversight to implement. This extensive dependency on the SRAs has contributed to inefficiencies and ineffectiveness of the Phase 2 reviews. Recently, the staff has indicated that there are continuing problems with the contractor's review associated with the Revision 1 Phase 2 notebooks (in at least one case). In addition, inspector training, needed to implement the Phase 2 reviews, was only recently addressed.

The DPO Panel concluded that the current implementation of SDP does not result in an unnecessary burden to the licensee. The DPO Panel agrees that the NRC staff should enter into a regulatory conference with the licensee with well supported safety significant insights. This can include insights from the Phase 2 notebooks, SPAR model and licensee's probabilistic safety assessment. There was a strong feeling among several of the NRC managers and staff that the Phase 2 notebooks alone, do not supply sufficient basis to go to a regulatory conference.

The DPO Panel found no basis to limit the number of assessment tools currently utilized by the NRC staff. It is conceivable that different tools could be applicable to varying categories of inspection findings. The panel recognized the potential for the SPAR models to provide safety significance insights beyond the plant specific notebooks while the notebooks, with planned improvements, could be an effective screening tool.

The following DPO Panel responses address each of the mischaracterizations cited in Mr. Pruet's DPO.

1. "These notebooks were independently developed..."

The DPO Panel found that the SDP Phase 2 notebooks provide an acceptable level of independence from the licensee's original IPEs. This determination was largely influenced by the activities and oversight by NRR to benchmark the notebooks, which have been accelerated since the DPV was submitted.

The DPO panel found that the notebooks were initially developed based on the inputs from the Individual Plant Examinations (IPE) provided from each of the licensees. The plant-specific notebook development includes the establishment of generic initiating frequencies and rules for application of the notebooks. Site specific information is assessed through the benchmarking activities to assure plant specific equipment, crosstie capabilities and operational practices are appropriately recognized.

2. "Notwithstanding the ongoing challenges, the phase 2 site specific risk-informed inspection notebooks...."

The DPO Panel did not agree with Mr. Pruet that the plant-specific Phase 2 notebooks are not risk-informed. However, the panel provided a separate recommendation with regard to uncertainty analyses based on review of this issue.

SECY-98-144 states that a risk-informed approach to regulatory decision-making represents a philosophy whereby risk insights are considered together with other factors to establish

requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to health and safety. Risk insights are derived from risk assessments. Hence risk-informed approaches are dependent on risk assessments. Mr. Pruett noted that the Commission's Policy statement on, "Use of Probabilistic Risk Assessment Methods in Nuclear Regulatory Activities," implies that PRA technology uses state of the art methods, reduces unnecessary conservatism, and is as realistic as possible.

Risk insights refer to the results and findings that come from risk assessments. The SDP uses core damage frequency (CDF) and dominant accident sequences which are certainly results from risk assessments. The SDP uses these results to focus licensee and regulatory attention on design and operational issues commensurate with their importance to health and safety. Therefore, the DPO panel disagrees with Mr. Pruett's statement that the Phase 2 notebooks should not be referred to as risk-informed. However, the panel notes that the quality of the analysis can impugn the value of the risk assessment. There seems to be no standard on which comparisons can be made to judge the accuracy of the PRA results. Decisions are made on point values that can vary significantly. The potentially large uncertainties associated with these kinds of analyses have not been accounted for in the analysis. There does not appear to be an attempt to quantify the uncertainties and factor them into the decision-making process.

3. "...there are substantial benefits to be gained from using the notebooks."

The DPO Panel concluded that the use of the Phase 2 notebooks currently provides marginal benefit within the ROP since not all of the notebooks have been benchmarked. The DPO Panel is concerned with the current state of the Phase 2 notebooks, the promotion of the Phase 2 notebooks based on their espoused future capabilities and benefits of the process, which to date have not been demonstrated, and an apparent lack of a long term vision to identify and develop the best Phase 2 assessment tool.

NRC management and staff believe that once a notebook has been through the benchmarking process, it will provide a greater benefit than a notebook that has not. In either case, the DPO Panel concluded that there is evidence that the Phase 2 notebooks are used as a screening tool with their limitations well recognized. The panel recognized that the benefits and efficiency of their use may improve as the notebooks are improved. Nonetheless, we agree with Mr. Pruett's inference that it's an overstatement to describe the notebooks as having "substantial benefits." A substantial benefit may eventually exist in performing reliable Phase 2 analyses, but currently this is not the case. The DPO Panel is also concerned that the benefits of the notebooks (gain risk insights) are being diminished as the complexity of the notebooks increases.

4. "Therefore, I do not agree with the central recommendation of the DPV to discontinue use of the Phase 2 plant specific risk-informed inspection notebooks."

Mr. Pruett believes this statement was out of context. He indicates that his suggestion was that the NRC needed to complete an independent assessment of the SDP tools to determine which was the most cost effective and suitable methodology for the NRC's needs. In the interim, he recommended the continued development and expenditure of resources for both the Phase 2 notebooks and the SPAR models should be suspended.

The DPO Panel agrees with Mr. Pruett's suggestion that the NRC needs to complete an independent assessment of the best SDP tool(s). However, we do not agree that the continued development and expenditure of resources for both the Phase 2 notebooks and the SPAR models should be suspended. But we do believe that comparative analysis should be performed to assess the strengths and weaknesses of these tools. This is consistent with the DPO Panel's third recommendation.

The DPO Panel agrees with the DPV recommendation of an overall review of the SDP (DPO Panel's first recommendation). Mr. Pruett believes that an independent review should be performed and that it should not be sponsored by the Inspection Program Branch. The DPO panel believes that individuals involved in the review should have a broad range of expertise including inspections, PRA, statistics, and individuals knowledgeable of the SDP, regardless of the organization sponsoring the review.

The DPO Panel agrees with Mr. Pruett's position that a Phase 3 analysis should be performed if the accuracy of the Phase 2 notebook is in question. Phase 2 notebooks have inherent limitations. By the very nature of the notebooks, there will be inspection findings that are not amenable to analysis using the notebooks. These limitations as well as the accuracy of the current notebooks have to be recognized and alternative analysis methods pursued when appropriate. Guidelines for performing Phase 3 analyses should be developed and applied consistently across the regions as appropriate. In fact, the DPO panel believes that the SDP should be implemented consistently across the regions, with recognition of factors influencing the process (see last DPO recommendation).

Ad Hoc DPO Panel Recommendations

In order to address the fundamental concerns raised in the DPV and the DPO, the DPO Panel makes the following recommendations:

1. **The DPO Panel strongly supports the DPV Panel's recommendation of an overall review of the SDP.** In addition, management should provide a transitional vision for the SDP to consider changes to the methodologies and tools available to assess safety significance. While we do not agree that the SDP process should be abruptly stopped at this point, we do agree that a vision should include a performance expectation for the process tools utilized. If more than one assessment tool is required, their range of applicability should be clearly articulated. An alternate approach to the plant specific notebooks could be the standardized plant analysis risk (SPAR) models. The DPO Panel heard much discussion on this issue. We concluded that with an improved interface, the SPAR models could be made user friendly and have the potential to produce an output in a format consistent with the output of the notebooks and make a significant improvement in the quality of the analysis performed to assess the safety significance of inspection findings. However, there needs to be an increased emphasis on the development of the SPAR user interface software. The DPO Panel noted that SPAR models can be readily applied to those issues which can be evaluated by the notebooks.
2. **The SDP should incorporate uncertainty analysis in the inspection finding assessments when important decisions are being made.** This does not imply that uncertainty analysis would be required for findings of very low safety significance.

However, uncertainty analysis would help to make the process more consistent with the Commission PRA Policy Statement and allow for better risk-informed decision-making. It is difficult to ascribe meaning to the point estimates that are derived using the plant-specific notebooks. With order of magnitude approximations for the unavailability of systems and components and the large uncertainties associated with the unreliability of human actions, questions regarding the efficacy of comparing delta core damage frequencies on the order of 1E-6 and 1E-5 naturally arise.

3. **Criteria for benchmarking the SDP should be subjected to peer review, and include validation of sequences and cutsets within licensee and NRC plant specific models and should involve individuals with statistical and PRA expertise.**

One would expect that competing tools (licensee plant specific models, notebooks, and SPAR) would not only yield core damage frequencies in the same range but would also identify the same dominant accident sequences to core damage, but this has not always been the case. If at the same time, the SDP process is being benchmarked against licensee probabilistic risk assessments (PRAs), there should be some independent review of the licensee's PRA. In addition, we have to be sure that we are comparing corresponding point estimates. It is not clear that this is possible unless we know how to characterize the results coming out of the SDP. Various point estimates can differ by orders of magnitude. Also, the benchmarking will have to be a continuous process because the plant is changed and consequently, PRA models have to change.

A comparative analysis of competing tools could be performed using standard problems designed to assess the performance of the assessment tools. With any tool, it will always be possible to conclude that a particular inspection finding was risk significant (as defined by the decision criteria) when in fact this is not the case (over estimating risk significance). In a like manner, it is always possible that a particular inspection finding will be declared not to be risk significant when it is risk significant (underestimating risk significance). Both of these situations result in errors and it is not possible to force these error rates to zero. However, the assessment tool that minimizes these probabilities of error would tend to be more desirable from a decision-making point of view. Much is being done to improve the timeliness, effectiveness, and efficiency of the SDP process but there seems to be less proportionate amount of effort focused on improving the quality of the analysis.

4. **The SDP process should be implemented consistently across the regions.** The DPO panel recognizes that Manual Chapter 0609 was recently revised to address this issue. However, there needs to be an accepted implementation standard that recognizes the tools, their efficiency in evaluating inspection findings, and other risk information available to both the inspectors and the senior reactor analyst.