SAND2019-9184R

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to: S. Scott Collis
Sandia Program Executive/Advanced Simulation and Computing Program

from: 2018 Predictive Engineering Science Panel

subject: Re: Sandia Response to 2018 PESP Final Report

The 2018 Predictive Engineering Science Panel (PESP) is pleased with Sandia's response to our 2018 PESP Final Report recommendations. We have read the response memorandum, applaud the overall Electromagnetic Radiation (EMR) Action Plan and Path Forward and compliment Sandia's progress to date. The panel identifies no pressing issues and proposes no course corrections. The panel does offer two high-level suggestions for the Advanced Simulation and Computing (ASC) Program Office.

1) Closely monitor the progress toward meeting the stated intent to increase the involvement of Validation & Verification (V&V) and Uncertainty Qualification (UQ) domain experts "to the point where they become part of our code teams and influence the code development direction and strategies." The panel commends the ASC program for allocating additional staffing resources for EM tool V&V/UQ. We are pleased that members of the Gemma team have developed a V&V/UQ strategy and have begun collaborating with Sandia's subject matter experts (SMEs). Though a good beginning, two V&V SMEs at one-third of their time each and one UQ SME at one-third time may not be adequate to achieve the intent of fully embedded V&V/UQ or the Sandia ASC Program goal of a rigorous EMR predictive capability.
2) Maintain the programmatic focus until the envisioned, robust EMR predictive capability is achieved and continue to assess Sandia's EMR computational simulation capabilities and model development efforts as technical advances unfold and/or unanticipated EM requirements arise. The panel understands that competing urgent and/or pressing programmatic needs will arise and that there are often pressures, both program- and customer-driven, to shift resources before a desired outcome is fully realized. We encourage the ASC program and the EMR line management team to stay the course on this important ASC capability challenge.

The panel thanks Sandia's ASC Program Office and Electrical Sciences management team for the reasoned response to our report recommendations and for the opportunity to comment on your response.

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