

FY 2008 Superconductivity for Electric Systems Peer Review Program Evaluation Form

OVERALL RATING: (Provide numeric score) _____

9-10	7-8	5-6	3-4	1-2
Excellent	Very Good	Good	Fair	Not Adequate

1. **Program Strategy:** Do the mission, goals and priorities of the program appropriately support the Office of Electricity Delivery and Energy Reliability? Do the goals and priorities properly reflect the needs of industry and other stakeholders? How could they be improved?

It's now been about 20 years since the Superconductivity Act of 1988 established the present program under the aegis of DOE. It's been around much longer than the Office of Electricity! I think it's now time for a serious discussion on rebalancing this program within DOE's overall energy portfolio. I say this in the full knowledge, admiration and recognition that the program has been overwhelmingly successful in meeting its technological goals and that SP and AMSC would not exist today were it not for the fruits of this program. Having said that, it is now time for their potential customers, especially utilities, to step up to the line and deploy the power devices the wire technology has enabled. The program has done its job.

2. **Program Structure and Management:** How well do the program activities support the overall program goals and priorities? Given the resources available, is the relative emphasis placed on the various program elements appropriate?

The program activities have outstandingly supported, with available resources, past program goals...emphasis "past." As pointed in (1), the goals need to be realigned to realistically address how critical power applications of superconductivity really are to the nation's energy technology mix.

3. **Implementation:** Is the program effectively leveraging its resources? Is the coordination with other related DOE, Federal and State activities adequate? Are the mechanisms for technology transfer appropriate? How would you assess the productivity of the program? Are the accomplishments and results commensurate with the investment being made?

I'm going to repeat my answer from last year's Evaluation:

“There is no doubt that the superconductivity program, which really began in 1989, has been overwhelmingly successful in a technical sense. But for the past several years, I’ve become concerned about the time line for substantive deployment of the technology in the utility sector. Maybe it’s time to “declare some victories” and scale back.”

This may not be a bureaucratically comfortable prospect to confront.

4. Are there areas of RD&D in which the program should be investing?

Last year I mentioned emphasizing mechanisms of isotropic pinning. This was done. I can’t think of anything further except to maintain ongoing investigations of the mechanisms of pinning and seeking support for these from BES.

5. What are the overall strengths of the Superconductivity Program?

Technological and program management.

6. What are the overall weaknesses of the Superconductivity Program?

Once more, I’m going to quote my remarks from last year:

“Near term relevance to the nation’s energy problems. This isn’t really the program’s fault. It’s a policy issue. Right now the economic incentives are just not there, but neither are the social ones. The long term, three to four decades out, is another matter.”

I would say power apps of superconductivity is approaching the state of FACTS (flexible ac (including dc) transmission systems), sometimes called SmartGrid, Self-Healing, GridWise, etc., in that it’s there, it works, and it’s ready to deploy when really needed. One hears a lot of talk about FCLs, but I’ll believe it when I see 10 utilities order 50 units.

7. Other Comments or Recommendations:

My following remarks are to be taken in an overall context, not specifically for Strategic Research.

- a. I was surprised...and disappointed...to see that the only change in the format of this year’s Program Evaluation Form was to change the date from 2007 to 2008. I think the topics and categories we’re being asked to address are becoming dated...completed may be a better description.**
- b. Do away with the WDG organizationally and integrate its programs into the general core program. WDG has been corporate welfare for AMSC and has served its purpose.**
- c. I believe that the HTSC program peer review need not be held every year anymore. Oh, I would recommend a major rebalancing of the**

criteria lineup and weights now Relevance (5%), Approach and Project Management (25%), Technical Accomplishments, Quality and Productivity (50%) and Technology Transfer, Collaborations and Partnerships (25%). I would suggest only two: Technical Accomplishments, Quality and Productivity (60%), and Prospects for Near-Term and Future Deployment (40%).

- d. Finally, perform a critical assessment of the US HTSC program vis-à-vis efforts abroad, keeping in mind that rich countries can afford rich toys, and probe their seriousness to deploy into their respective energy infrastructures. Over the last year, I have visited Japan, China, Korea and Russia. All have “demonstrations” of various kinds, but no activity I would term serious plans for deployment. One may point to KEPCO, but I pinned down their people while at ICMC-ICEC and they admitted they had no plans beyond their current demonstration. Japanese and Chinese utilities have “opted out” for now. Russia is still “testing wire.” I’ve heard nothing about the Amsterdam cable recently.**