

INVESTIGATION

CLOSED

A legal case about public access to documents is raising questions about the US Department of Energy's scrutiny of alleged scientific misconduct.

BY EUGENIE SAMUEL REICH

On 6 April, a federal district judge in Boston, Massachusetts, dismissed a lawsuit that I had filed in 2009 under the US Freedom of Information Act. He concluded that the US government does not have to release a report on an investigation into a case of alleged scientific misconduct at a national laboratory. The ruling was disappointing but liberating: I finally had occasion to write about a case that has shown how the US Department of Energy (DOE) takes a strikingly hands-off approach to the oversight of such investigations.

The lawsuit concerns a report on an investigation into vehemently denied allegations of data fabrication by scientists who receive millions of dollars per year from the DOE's Office of Science. I have asked the judge to reconsider his decision, so the case remains pending. But the larger issue of lax oversight is highlighted in documents filed in court by the government, including nine sworn declarations from DOE and lab officials. These documents show that the DOE officials overseeing the investigation merely skim-read an incomplete version of the resulting report, did not read the complete final report, did not keep a copy of that final report anywhere in their files, and voluntarily gave away a version that was sent to them. I have also learned, through interviews, that scientists who tried to contact the DOE to express concerns about the investigation did not get a hearing.

The court filings suggest that agency officials did not think that they were acting improperly; indeed, they justify their actions by citing the US federal policy on research misconduct, which since 2000 has governed how

allegations should be handled. But the DOE's approach contrasts with much stricter interpretations of the same policy at some other US government science-funding agencies, which typically handle such allegations in an independent office staffed with professional investigators. The DOE is unusual in allowing the allegations to be handled by the officials who awarded the grants in the first place, who will potentially be reluctant to see a problem in that research. Independent observers worry that the DOE's loose oversight could undermine the credibility of research funded through its Office of Science, which supports 10 national laboratories and around 27,000 scientists.

CORRECTIONS AND REFUTATIONS

The allegations that were under investigation first emerged in 2006, when an anonymous peer reviewer accused a research group at Oak Ridge National Laboratory (ORNL) in Tennessee of fabricating data in two manuscripts: a then-current submission to *Nature Physics*, which has not been published, and a paper that had been published in 1993 (*Nature* **366**, 143–146; 1993). The ORNL group is headed by Stephen Pennycook, an electron microscopist, and the earlier work had been a landmark paper in atomic-scale imaging. Pennycook, a pioneer of such techniques, has been pushing the limits of spatial resolution in electron microscopy to solve problems in a variety of research areas, including materials sciences, nanotechnology and condensed-matter physics.

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Pennycook told me in an e-mail that he preferred not to comment for this article, “as I think there is nothing to discuss”. He does address the allegations on the group’s website (go.nature.com/gtyqpm), where he denies that his group fabricated or falsified data — although he admits that the researchers made errors of judgement in their data presentation. A panel of investigators appointed by ORNL managers upheld the group’s conduct. In a summary statement posted on the ORNL website in 2008 (go.nature.com/ilywxc), the three scientists on the panel said that there was evidence that Pennycook’s team had made careless factual errors and errors of judgement in data presentation, but there was no evidence for misconduct or fraud. In an interview with me, David Williams, one of the investigators and now dean of engineering at Ohio State University in Columbus, went further, slamming whoever made the anonymous allegations. “To go around claiming fraud is a witch hunt of zealots,” he said. “It doesn’t serve the cause of science.”

Following the investigation, the Pennycook group published a correction to its 1993 paper. Nonetheless, some scientists outside ORNL were uncomfortable with the investigation, and particularly with the managers’ failure to release the resulting report. “It’s taken place in the dark,” says John Silcox, an electron microscopist at Cornell University in Ithaca, New York, who was a reviewer of the 1993 paper. It was also unclear how officials at the DOE, which funds Pennycook’s group to the tune of around US\$2 million a year, had overseen the investigation.

This lack of transparency at both ORNL and the DOE was a leading motivation for my freedom-of-information request to see the report. Although the report has not been released, declarations filed in court in response to my lawsuit have shed light on the oversight of the investigation.

In 2006, the declarations say, James Roberto, then ORNL deputy director for science and technology, sent a report on the lab’s investigation to Patricia Dehmer, then the associate director of basic energy sciences in the DOE’s Office of Science, and now the office’s deputy director. In her own declaration, Dehmer says that she understood that this report was only a draft, because it said as much on the first page, and because it didn’t contain referenced appendices — although she does not

“I DO NOT RECALL THE CONTENTS OF THIS BINDER, NOR DO I RECALL READING OR STUDYING THESE MATERIALS”

specify what she would have expected such appendices to consist of. Dehmer says that she looked through the document only briefly, to check that it reflected what Roberto had told her about the case during conversations and telephone discussions.

In an e-mail, Dehmer told me that by November 2006, ORNL and the Office of Science considered that the investigation was complete. But some time after that, ORNL reopened the case, because managers there had received extra material, the nature of which they do not describe in the court documents. As a result, ORNL produced an extended final report; the lab sent this revised document to the DOE by overnight post. This time,

however, Dehmer didn’t read the report at all. Her declaration to the court says, “a copy of briefing materials in a binder was sent to me. I do not recall the contents of this binder, nor do I recall reading or studying these materials ... due to the other pressing responsibilities during this time frame.” Later, she and several members of DOE staff went to a meeting with Roberto, where they questioned him about the case. Dehmer approved the investigation, she says, on the basis of the “thorough” responses that she received from Roberto.

In declarations to the court, five DOE employees who attended the meeting say that they did not read the final

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report. At the end of the meeting, Dehmer gave the document to Roberto to take back to ORNL; nothing was left in the government’s possession except the incomplete e-mailed copy that Dehmer had skim-read.

This procedure raises substantial concerns among external experts. Christine Boesz, a former inspector-general overseeing research integrity at the National Science Foundation (NSF), says that it is highly problematic for the government not to keep possession of a final report about a case of alleged misconduct. She points out that government agencies need to keep records, in case of a change of personnel. A failure to fully document cases could make it impossible for the agency to police its research effectively, because it wouldn’t be aware of patterns or alleged patterns involving contractors. “Even a pattern of allegations can tell you a lot,” says Boesz. “The written document is an integral part of the process. If this is the way they typically handle it, then it raises big questions in my mind. Is this looking after the government interest?”

Sybil Francis helped to draft the federal policy on research misconduct while working at the White House Office of Science and Technology Policy in 2000. She says that, according to the spirit, intent and letter of that policy, the government should have access to the documents it needs to conduct oversight. “I don’t see how a federal agency can carry out its oversight responsibilities in a case of alleged or proven research misconduct without the proper documentation at its disposal,” she says. Francis adds that at the very least, she would expect an adjudicating official to get a member of her staff to read the investigation report carefully, and not simply rely on oral presentations.

C. K. Gunsalus, a law professor who studies research misconduct at the University of Illinois at Urbana-Champaign, is perplexed by DOE officials’ failure to read the report. “I think it’s breathtaking, I’m truly astonished,” she says. She contrasts the DOE’s practices with those of two other government agencies: the NSF and the Office of Research Integrity at the Department of Health and Human Services, which funds research at the National Institutes of Health. “The submission of an investigation report to the Office of Research Integrity or the inspector-general of the NSF means without question that the report will be examined with care,” she says. She notes that it is not uncommon for an investigation committee’s first draft

to flinch from difficult conclusions, to make statements without support or to overlook something. But at these other federal agencies, oversight is iterative, with officials encouraging a thorough investigation by examining the evidence for themselves and asking investigators at the institution for further documentation. If they don't read the report, they can't do that.

Peter Stockton, a senior investigator at the watchdog group Project on Government Oversight in Washington DC, has studied management of weapons labs by the DOE. He says that a general problem at the labs and at DOE headquarters is that officials do not want to probe difficult situations that might result in political fallout and budget cuts. "The most important thing is to limit damage to the organization," he says. He comments that the Office of Science has a large enough budget, at \$4.9 billion a year, for the DOE to consider launching an office of research integrity to oversee it.

Dehmer would not comment on these criticisms. But in her declaration filed in court, she says that federal policy allows government agencies to delegate the job of investigating to research institutions, because to do otherwise "would have involved a substantial new federal bureaucracy, which is not thought desirable" — a quote from the federal misconduct policy. The current director of the Office of Science, William Brinkman, also did not respond to my request for comment, and a DOE spokeswoman notes that "the department does not comment on specific questions relating to litigation matters".

Raymond Orbach, director of the DOE Office of Science at the time of the investigation, says that he does not recall any details of the case. In general, he says, he reads investigation reports when acting in oversight of a case. Orbach notes that ethics are usually handled by the general counsel's office at the DOE, and are a very serious issue for any government agency. But he disputes the value of an office of research integrity at the DOE, saying that he is concerned about the possibility of oversight boards probing into mistakes that scientists have made. "The community has a well-worn method for policing itself," he says: checking whether results are reproducible.

EXTERNAL INTEREST

While the DOE was preparing to close the case, two electron microscopists at Cornell, David Muller and Silcox, were undertaking an independent analysis of the Pennycook group's 2006 correction. In 2006, the two researchers submitted a technical comment for publication in *Nature*, claiming to show that Pennycook's correction is inaccurate, and that the central claim of the 1993 work — that the team had successfully used an electron microscope to image the interface between two materials with atomic resolution — is not supported. Neither Muller nor Silcox made the original allegations against Pennycook's group, although Muller says that he gave advice to the scientist who did. *Nature* accepted the technical comment for publication, pending a reply by Pennycook. A draft of that reply says that the technical comment contains "a mix of criticism with little scientific basis, false statements, irrelevancies, and suggestions of scientific misconduct", and that the group has been cleared. Although Muller's comment (J. Silcox and D. A. Muller Preprint at <http://arxiv.org/abs/1106.4534>; 2011) was accepted, it was never published in *Nature*. Karl Ziemelis, *Nature's* chief physical sciences editor, told me that he cannot comment on unpublished submissions, but notes that, in general,

technical comments are a forum for scientific discussion, not for airing allegations of misconduct.

The DOE was aware of Muller and Silcox's analysis; in 2007, Dehmer referred to it in an e-mail to me. But the agency has never asked to see it, and when Muller and Silcox tried tentatively to raise their concerns with the relevant officials, they had a frosty reception. Muller says that his initial approach was to contact ORNL to express his concerns and offer full details to any independent committee, but none was appointed. Barbara Penland, a spokeswoman for ORNL, says that any extra concerns that the lab received about the case were referred to an internal inquiry that did not find any issues that warranted

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further investigation, and that the entire ORNL response was assessed by the science and technology committee of the board of governors of UT-Battelle, the contractor that runs the lab. "It concluded that the investigation was handled properly, free of conflict of interest and consistent with applicable federal guidelines," she says.

Muller and Silcox did consider contacting the DOE directly. Cornell's vice-provost for research, physicist Robert Richardson, called Orbach to try to open a line of communication, but was unsuccessful. Orbach, who is now director of the Energy Institute at the University of Texas, Austin, says that he does not recall specifics of any phone calls. Silcox says that he tried to contact Harriet Kung, current associate director of basic energy sciences at the Office of Science, who was involved in approving the investigation according to the government filings, but that she would not discuss the case with him. Kung did not respond to a request for comment.

For Muller, the lesson of this episode is clear. "The DOE needs an office of research integrity," he says. Not only would that allow for independent oversight, but it would also protect complainants who risk losing their own funding if their concerns are not welcomed by grant officers. Since he submitted his comment to *Nature*, Muller has himself received DOE funding, and he admits that the fear of losing that money makes it harder to bring his concerns forward.

As for my lawsuit, the DOE's handling of the investigation report seems to have protected the document from disclosure, at least for now. The judge found that the report is not a government record releasable under the Freedom Of Information Act — primarily because government officials have never read it. I have brought a motion to reconsider, so the case remains open. But an unexpected question has now been raised: should taxpayers be allowed to read about how alleged misconduct at the US national labs has been investigated, even if government officials don't? ■ [SEE EDITORIAL P.5](#)

Eugenie Samuel Reich is a contributing correspondent for *Nature*. In *Reich v. the US Department of Energy 1:09-cv-10883-NMG* in the US District Court in Boston, Massachusetts, she is represented by David B. Smallman and Michael A. Pezza Jr.