regulated pollution control activity, such legislative demands are increasing, particularly in Europe.

The more general concern, however, is that because of the lack of any agreed set of criteria, objectives, or biological end points that can be measured to any specified degree of accuracy and precision, it is difficult to demonstrate whether the environment is protected from ionizing radiation to a level deemed legally, socially, or economically acceptable under different circumstances. These circumstances extend beyond the trivial routine discharges from nuclear power stations, into the realms of evaluating waste disposal options in general, preparing for the consequences of accidents, and working to remediate contaminated environments.

We have a fair amount of knowledge on the effects of radiation on creatures other than man and on the behavior of radionuclides in the environment, but most of this has been derived or interpreted in the context of human radiation exposure. It needs to be reevaluated within a different framework: potential effects on and consequences for the environment. Yawning gaps will be found, and further research work will be needed. Not to address this deficiency is shortsighted; the legislative need is already creating different approaches from one country to another. What we desperately need is a sensible global debate about the relative merits of energy production from different sources. This must be done on a quantitative basis to produce something like a "human and environmental impact index" per GW(e). The proposed new systematic approach, combined with the existing ICRP one for humans, would enable this to be done for nuclear power.

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References
1. R. J. Pentreath, *J. Radiol. Prot.* **19**, 117 (1999).
2. ———, *J. Radiol. Prot.* **22**, 45 (2002).
3. International Commission on Radiological Protection, *ICRP Report* **60** (1991).
4. L.-E. Holm, L. Hubbard, C.-M. Larsson, S. Sundell-Bergman, *J. Radiol. Prot.* **22**, 235 (2002).

THE CENTRAL ISSUE IN THE DEBATE ON environmental radiation protection, recently covered by Richard Stone in his article "Radioecology's coming of age—or its last gasp?" (News Focus, 13 Sept., p. 1800), is whether the current anthropocentric system of protection is also adequate to protect the environment.

Much of the groundwork for the Monte Carlo meeting mentioned in the article was laid at a consensus conference in Oslo in October 2001 (*1*). The conference was arranged by the Norwegian Radiation Protection Authority and the Agricultural University of Norway in cooperation with the International Union of Radioecology to explore ethical, philosophical, and environmental issues regarding environmental protection. Key conference conclusions include the following: (i) There is a need to address environmental protection as part of the effort to revise and simplify the current system of protection for humans. (ii) Ethical values, sustainable development, conservation, and biodiversity are reasons for specifically protecting the environment. (iii) The best available technology, including consideration of economic costs and environmental benefits, should be applied to the control of environmental releases of radionuclides in a balanced manner with respect to other environmental insults. (iv) Precautionary measures to reduce the potential risks within reasonable cost constraints should be applied when a product or activity may cause serious harm to humans or the environment and significant uncertainties exist about the probability of harm.

The United States is the only country that has developed or proposed guidance for environmental radiation protection. Limits range from 1 to 10 mGy/day for aquatic and terrestrial biota (*2*). By comparison, exposures to the general public are limited to 1 mGy/year (assuming exposures are from x and gamma radiation sources).

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References
1. Consensus Conference on Protection of the Environment from Ionising Radiation, Oslo, 22 to 25 Oct. 2001 (www.iur-uir.org).
2. U.S. Department of Energy, *Fed. Reg.* **61** (no. 36), 6799 (26 Feb. 1996).

Keeping Meetings Under Wraps

SEVERAL FACTORS HAVE CONTRIBUTED TO THE unhappiness with the current operating mode of the U.S. National Science Board. In addition to the factors mentioned in Jeffrey Mervis's article "Congress puts the squeeze on NSF's oversight board" (News Focus, 4 Oct., p. 42), the board's narrow interpretation of the 1978 Government in the Sunshine Act has made too many of its policy deliberations opaque.

Specifically, the board, beginning in December 1979, elected to close all its committee meetings to public observation and to increasingly conduct detailed policy deliberations in those committees. As a result, too often, the two full days of board meetings held five or six times annually included public sessions of only 1 or 2 hours, which were devoted to routine personnel and other announcements. One result has been that most of the science press, congressional staff, and members of the public stopped attending board meetings as observers.

At the October 2002 board meeting, the search for a new and less narrow approach to open meetings appeared to have begun. Most significantly, there was evidence of a new and different attitude toward public access to the board's activities. But much remains to be done. A good model of openness might well be the Director's Advisory Committee at the NIH.

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Advice Without Dissent at the DOD

THE BUSH ADMINISTRATION HAS MOVED unwisely to assure scientific advice without dissent in the Department of Defense (DOD), a situation that may be more serious than the instance at the Department of

Health and Human Services cited by D. Michaels *et al.* in their Editorial "Advice without dissent" (25 Oct., p. 703).

Last fall, I was part of a group, most of whom had been consultants to the Army Science Board (ASB), who were nominated to become full members of that Board, which is composed of scientists, engineers, and retired flag-rank military whose mission is to advise the Army on technical matters. The Army passed our names to the White House Liaison Office in the Office of the Secretary of Defense (OSD) after the Army's approval. Once there, however, about a dozen of us were disapproved.

I learned from an ASB colleague that there is a Web site (www.opensecrets.org) that is being used to see the names of donors to political campaigns. I was also told by a member of the ASB staff that I was supposed to have contributed to Senator John McCain's campaign—the reason for my being disapproved. I went to the Web site (still active) and saw that a William S. Howard, a retiree from Fairfax, VA, had contributed twice for a total of $1000 to McCain's campaign. Because "S" is not my middle initial, I do not live in Fairfax, VA, and the zip code listed on the Web site is not the same as mine, and because I had made no such contributions, I asked the ASB to try to reverse the OSD decision. They demurred, saying that they did not want to upset the OSD White House Liaison Office.

The Editorial by Michaels *et al.* is right on the mark. I wonder if the problem is broader than this. The country is not being well served by any administration's policy of seeking advice only from a group of scientists and engineers who have passed the administration's political litmus test.

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Unpopular Opinions Need Not Apply

THE EDITORIAL BY D. MICHAELS *ET AL.* ("Advice without dissent," 25 Oct., p. 703) describes attempts by Secretary of Health and Human Services Tommy Thompson to influence the advice the government gets from advisory committees by stacking their membership with scientists who share President Bush's views on science and health policy. The stories about efforts to manipulate committees that advise the government on such highly charged issues as genetic testing and childhood lead poisoning are troubling, but the manipulation extends even more deeply into the federal science establishment than they suggest.

Secretary Thompson announced when the Bush administration took office that he wanted to conduct a review of Department of Health and Human Services (DHHS) advisory committees and that nominations for membership on those panels would be frozen until his review was completed. Thompson's review includes not only the high-level panels that advise the DHHS on matters of policy, but also some peer-review study sections, which are also advisory committees under federal law. I am chair of one of the affected study sections, which reviews research grant proposals submitted to the National Institute for Occupational Safety and Health (NIOSH) and other agencies. The 2-year freeze on new memberships has complicated our work, but it was assumed that study sections, which are charged rather narrowly with advising federal agencies on the scientific merit of proposed research projects, were not the real targets and that we would eventually be allowed to continue with business as usual.

This assumption has proven to be incorrect. Secretary Thompson's office recently sent word that three candidates nominated for permanent membership on the study section would not be confirmed. NIOSH's Director was allowed to nominate replacements for the three rejected candidates, however, rather than having to accept a slate named by Thompson's office.

The secretary declined to give reasons for rejecting the three scientists nominated for membership on the study section. They are all established scientists who had served as temporary members for some time and whose qualifications had been duly reviewed and approved at every other level. The reasoning nevertheless seems clear in at least one case: One of the rejected nominees is an expert in ergonomics who has publically supported a workplace ergonomics standard.

It is not clear how such views could affect public policy, except through a long, convoluted pathway in which a reviewer might favor a proposed project whose results, when the project was completed, could eventually be cited in support of a standard. But that is beside the point. In contrast to policy advisory boards, where the potential for political conflict is recognized and members are supposed to represent a range of views, study section members are selected for their expertise in research and may not consider the relevance of the projects they review to specific government policies.

This level of political interference with peer review is an ominous precedent for research throughout the federal government. I am not aware of attempts to ma-