Low-Level Radioactive Waste

The State Has Limited Information That Hampers Its Ability to Assess the Need for a Disposal Facility and Must Improve Its Oversight to Better Protect the Public

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Department of Public Health's response as of December 2008

The Joint Legislative Audit Committee (audit committee) requested that the Bureau of State Audits (bureau) conduct an audit assessing the management and oversight of low-level radioactive waste (low-level waste) by the California Department of Health Services (now the Department of Public Health (department)), the Radiologic Health Branch (branch), and the Southwestern Low-Level Radioactive Waste Commission (Southwestern Commission). Although we reviewed the Southwestern Commission's policies and practices, we did not have recommendations for it and, as a result, we do not mention the Southwestern Commission further in this subcommittee report write-up.

Public concern related to the disposal of low-level waste will likely increase in the near future because entities in California that generate this waste are losing access to one of the two disposal facilities they currently use. In June 2008 the disposal facility in Barnwell, South Carolina, is scheduled to cease accepting low-level waste from generators in many states, including California. Generators of low-level waste will need to consider alternative methods, including long-term or off-site storage, to deal with their most radioactive low-level waste. Unfortunately for decision makers in California, the implications of this pending closure and what it means for the State's public policy are not clear-cut.

Finding #1: The department has not adopted dose-based decommissioning standards.

Decommissioning is a process in which the department concludes that a physical location that formerly contained radiation is sufficiently clean for the public to use it safely and qualifies the location for release from further regulatory control. The department is responsible for approving and overseeing plans to decommission licensed equipment and facilities within its jurisdiction. In 1998 the department began informally applying the U.S. Nuclear Regulatory Commission's (NRC) standard of .025 rems, or 25 millirems (thousandths of a rem) per year (mrem/yr) whenever it decommissioned licensed equipment or facilities under its jurisdiction and terminated such licenses. Applying the new dose-based standard meant that equipment or facilities could be released from further regulatory control as long as the degree of residual radioactivity remaining at the site would not result in more than 25 mrem/yr of exposure to those members of the community who would likely be affected. In October 2001 the department formalized this practice of using the 25 mrem/yr standard by adopting regulations that incorporated by reference the federal standard. These new regulatory standards were controversial; within a matter of months, they were challenged in court. In April 2002 the court found that the new regulatory standard had been adopted without satisfying

Audit Highlights . . .

Our review of the State's approach to managing low level radioactive waste (low-level waste) found the following:

» *In June 2008 generators in California will lose access to one of the two low-level waste disposal facilities that currently accept their waste.*

» *The Department of Public Health (department) has yet to follow a 2002 executive order requiring it to develop dose-based decommissioning standards, resulting in a lack of public transparency and accountability over its actions.*

» *The department's Radiologic Health Branch (branch) cannot demonstrate that its inspections of those that possess radioactive material and radiation-emitting machines are performed timely in accordance with federal and state requirements.*

» *The branch has poorly planned for its resource needs, is unable to justify the magnitude of its 2005 fee increases, and used old and incomplete data when asking for more staff.*

» *More than five years after the effective date of the law, the branch is still unable to provide required information on the amount of low-level waste generated in California.*

the requirements of the Administrative Procedure Act and the California Environmental Quality Act (CEQA). In May the court issued an order directing the department to set aside its approval of the challenged regulations, insofar as the regulation incorporated the 1998 NRC standard.

On September 30, 2002, the former governor issued Executive Order D-62-02 (executive order). Unlike the 2002 court order, which simply directed the department to set aside the challenged regulations, the executive order imposed a direct obligation on the department to adopt regulations that would establish dose-based standards for the decommissioning of low-level waste. The executive order also directed the department to comply with all applicable laws, including CEQA, when it adopted those dose-based standards. When we asked the department to describe the efforts that it had undertaken to adopt such regulations, it told us that it had not done so because of the prohibitive expense and because of the likely opposition it might encounter.

To provide greater public transparency and accountability for its decommissioning practices, we recommended the department begin complying with the Executive Order D-62-02 and develop dose-based decommissioning standards formally. If the department believes that doing so is not feasible, it should ask the governor to rescind this 2002 executive order.

Department's Action: Pending.

The department stated that its administration continues to assess the public health and budgetary pros and cons of various options to implement or rescind Executive Order D-62-02.

Finding #2: The branch lacks sufficiently reliable data to ensure it conducts all required inspections on time.

One of the branch's key oversight activities includes inspecting licensees that use radiation-emitting machines or possess radioactive material, ensuring they do not expose the public to harmful radiation. Although federal guidance and state law define how frequently such inspections should occur, the branch is unable to demonstrate that it promptly performs these inspections. Its data systems contain data that are not sufficiently reliable, and this shortcoming prevents the branch from accurately assessing whether all inspections take place when necessary. For example, in one data system, we noted that the data values in the priority code field were incorrect in two of the 16 sample items for which we were able to obtain documentation. Since this field defines the required inspection interval for a given licensee, errors would result in too frequent or too few inspections being scheduled based on this data. Overall, the branch's lack of sufficiently reliable information appears attributable to its use of data provided by its own information technology staff, who do not fully understand what data they are extracting or why they are extracting it, as well as to the lack of management controls that would help guard against inaccurate data entry. Although the branch recognizes the limitations of its current data systems and has tried to replace them since 1996, it continues to operate in an environment in which it cannot adequately manage its work, thus limiting its ability to protect the public from potential health risks. The branch's data needs are currently included as part of the development of a department-wide data system. It states that the project's first phase, which supports the branch, should be completed in November 2010.

To make certain that the branch uses sufficiently reliable data from its current systems to manage its inspection workload, we recommended the department do the following:

- Improve the accuracy of the branch's data for inspection timeliness and priority level. The branch can do so by comparing existing files to the information recorded in the data systems.

- Improve its internal controls over data entry so that it can maintain accurate data on an ongoing basis. Such controls might include developing a quality assurance process that periodically verifies the contents of licensee files to the data recorded electronically. Other controls might include formalizing data entry procedures to include managerial review or directing the information technology staff to perform periodic logic checks of the data.

Finally, to ensure that the branch uses sufficiently reliable data from its future data system to manage its inspection workload, the department should develop and maintain adequate documentation related to data storage, retrieval, and maintenance.

Department's Action: Partial corrective action taken.

The department stated that it will make functional system modifications to address data reliability and quality concerns with its existing systems. These changes include issue management, change and test management, work-arounds, access control, business rules compliance assurance, error reports, peer and supervisor reviews, and tracking sheet capability development. The department expects to complete these modifications by January 2009.

Regarding its future data system, the department acknowledged our recommendation to use sufficiently reliable data. The department stated that it received administrative and legislative approval of a feasibility study report for its new enterprise-wide, on-line licensing system (licensing system). The department also stated that it has begun selecting staff for the project and anticipates issuing a request for proposals by July 2009. The department believes that this licensing system will help it further develop and implement a Web-based information technology system that will not only meet management and customer needs but also address the bureau's data improvement recommendations. The department expects the licensing system to be fully deployed by 2011.

Finding #3: The branch cannot demonstrate that the extent of its 2005 fee increase was necessary.

The State's Radiation Control Fund (Control Fund) supports most of the branch's operations, and money in the Control Fund comes from the fees that the branch levies on entities that possess radioactive materials or use radiation-emitting machines, fines and penalties assessed, and interest earned from money in the Control Fund. For each fiscal year from 2000–01 through 2004–05, the ending balance of the Control Fund declined. According to the State Controller's Office, the balance of the Control Fund was $13 million at June 30, 2001, declining to $4.3 million at June 30, 2005. Sparked in part by the declining balance, the branch obtained approval in June 2005 from the State's Office of Administrative Law for changes to the regulations that establish its fees. As a result, some of the branch's fees increased by more than 200 percent over the previous fee levels, while other fees increased by less than 35 percent.

Although it appears that the branch needed to address the declining balance of the Control Fund, the analysis and justification for its higher fees lacked specific quantitative workload and fiscal analyses one would reasonably expect. Lacking such analyses, the branch is unable to sufficiently demonstrate how it calculated the various new fee levels and that its fee increases were reasonably related to the costs of services provided to those that pay them. Additionally, the branch's inability to fix problems with its billing systems, and the resulting uncertainty as to whether it was collecting all the revenue it could have, further calls into question the need for the fee increases in June 2005.

To ensure that the branch can sufficiently demonstrate that the fees it assesses are reasonable, we recommended the department evaluate the branch's current fee structure using analyses that consider fiscal and workload factors. These analyses should establish a reasonable link between fees charged and the branch's actual costs for regulating those that pay the specific fees. Further, the analyses should demonstrate how the branch calculated the specific fees.

Department's Action: Partial corrective action taken.

The department stated that to ensure that current fees are appropriate, it initiated fiscal and workload analyses. Further it stated that it is developing workload standards that identify responsible individuals, tasks to be accomplished, milestones, time and resource factors, status, and anticipated completion date. Finally the department stated that it now has the information for the fiscal analysis and that information for the workload analysis of its various sections will be completed in stages with the analysis for the last section being available by March 2009.

Finding #4: The branch has not determined how many employees it needs to fulfill its federal and state obligations.

The NRC, which periodically evaluates the branch's performance, raised concerns regarding its inadequate staffing in 2004 and again in 2006. In addition, the branch justified its need for fee increases in 2005 by citing increased work backlogs. It obtained the approval for eight health physicists for fiscal year 2006–07 and an additional eight positions for fiscal year 2007–08. As of March 2008 it has filled 13 of its 16 new positions with 12 health physicists and one associate governmental program analyst.

The branch claimed in its fiscal year 2006–07 budget change proposal that the additional staff would allow it to meet all its federal and state mandates. However, we question how it could make such a claim when it used workload analyses that were at least three years old, focused only on the current workload and excluded the backlog, and did not account for the staff needed to meet certain state mandates. Although the department indicated that it had not fully evaluated the branch's staffing needs since the mid-1990s, the branch requested an additional three permanent and two limited-term positions for health physicists for fiscal year 2008–09. However, the branch's inability to fulfill its goal of reducing backlog and meeting state mandates, at a minimum, raises questions as to whether it understands the staffing levels necessary to successfully accomplish all of its responsibilities.

To make certain that it can identify and address existing work backlogs and comply with all of its federal and state obligations, we recommended the department develop a staffing plan for the branch based on current, reliable data. The plan should involve a reevaluation of the branch's assumptions about workload factors, such as how many inspections an inspector can perform annually. The plan should also include an assessment of all backlogged work and the human resources necessary to eliminate that backlog within a reasonable amount of time, and an assessment of all currently required work and the human resources necessary to accomplish it.

Department's Action: Partial corrective action taken.

The department stated that it developed a plan to correct and eliminate existing inspection backlogs to ensure compliance with federal and state requirements and that it continues to resolve backlogs in accordance with that plan. Although this suggests progress, the department did not provide us with its plan or an update on the sufficiency of its current staffing levels.

Finding #5: The branch has not complied with a state law requiring that it report data on low-level waste within California.

More than five years after its September 2002 enactment, the branch still has not implemented requirements that the Legislature added to the Health and Safety Code, at Section 115000.1, which call for reporting on the amount of low-level waste stored in California or exported for disposal. As of April 2008 the branch had not produced the report, nor had it yet implemented the information system needed to generate such a report. In fact, the branch did not initially request the necessary data from licensees until April 2007. Without this information, neither the Legislature nor the branch can accurately assess the need for a disposal facility in California. Further, without this information, the department does not have a documented basis to know how to plan for the closure in June 2008 of one

of the two low-level waste disposal facilities that accept such waste from California's generators. State law requires the department to have a contingency plan in the event that an out-of-state disposal facility is closed.

Furthermore, when the branch finally does prepare the report, it may not contain all the information required under law. The provisions place data collection and reporting requirements on the department and allow it to use copies of shipping manifests from generators to provide the necessary information. However, the branch determined that the shipping manifests do not provide information on 12 of the 57 discrete data elements required by the legislation. The department is aware of these deficiencies and has stated the branch will need to revisit the issue with the department's executive management and the legislation's author to ensure that the required information meets the intent of the legislation.

To inform the Legislature when it is likely to receive the information to evaluate the State's need for its own disposal facility, we recommended the department establish and communicate a timeline describing when the report required by Section 115000.1 of the Health and Safety Code will be available. The department should also see that its executive management and the branch discuss with appropriate members of the Legislature as soon as possible the specific information required by state law that it cannot provide. Further, to the extent that the department cannot provide the information required by law, it should seek legislation to amend the law. Finally, when the branch has an understanding of the disposal needs for generators in California based on this data, it should develop an updated low-level waste disposal plan.

Department's Action: Partial corrective action taken.

The department agreed with the recommendation to communicate its timeline to the Legislature regarding the availability of the required report. It currently anticipates completion of a report based on 2007 information by May 2009 and expects to issue subsequent reports annually thereafter. The department also intends to confer with the Legislature regarding data limitations related to the law when the first report is completed.

The department disagreed with the recommendation to develop an updated low-level radioactive waste disposal plan. It asserted that disposal of low-level radioactive waste is a national issue that affects the ability of 36 states due to the closure of the Barnwell disposal facility in June 2008 and that a national solution will provide the only permanent solution for the states. The department also stated that existing data from other sources like the U.S. Department of Energy can be used to evaluate disposal needs.

Finding #6: A complete strategic plan could help the branch operate more effectively.

Although no state law specifically requires the branch to have a strategic plan, its inability to completely address issues concerning inspection data that is not sufficiently reliable, as well as its inability to justify its resource requests, suggest the branch might benefit from improving the limited plan it currently has. According to guidelines published by the Department of Finance, strategic planning is a long-term, future-oriented process of assessment, goal setting, and decision making that maps an explicit path between the present and a vision of the future. The branch currently uses a plan that lacks many essential elements of strategic planning and could benefit from setting priorities that would help it more effectively manage its work. The branch's plan contains some objectives tied to the goals, but they are not specific or measurable, as recommended by the Department of Finance. Without measurable objectives, action plans, performance measures, timelines, and monitoring, it is more difficult for branch management to know whether it is meeting the plan's goals.

To better manage its performance in meeting key strategic objectives, we recommended the branch establish a new strategic plan that contains all essential elements, including performance metrics and goals that the branch believes would be relevant to ensuring its success.

Department's Action: Partial corrective action taken.

The department stated that it agrees with the recommendation and that the branch's revised strategic plan will include specific goals and objectives, and metrics to ensure that the branch measures its performance. It also stated that the branch is soliciting bids for assistance with strategic planning and that a strategic plan is expected to be completed by May 2009.