



# The Certifier

A Newsletter for Environmental Control Certifying Authorities

## Past President's Message

by Margaret Doss, Georgia State Board of Examiners for Certification of Water & Wastewater Treatment Plant Operators & Laboratory Analysts

It is hard to believe that 2006 is already behind us. The Association of Boards of Certification is a great organization, and I have been honored and humbled to have served as its President. I believe that the strength of ABC is a direct result of the work of its many volunteers: 173 Job Survey participants, 100 Item Bank reviewers, 60 Validation & Examination (V&E) committee members, 18 committee chairs, 7 task force chairs, and 14 voting Board members. I have enjoyed working with many of you during my tenure with ABC, and feel fortunate to be able to call you friends as well as business associates. A second asset for the Association is its staff. As President, I have had the opportunity to work with several of the staff members, and I appreciate the great work they do serving our members.

In my mind, one of the biggest accom-

plishments during 2006 was the development of the Association's 5-year Strategic Plan. Kim Dyches chaired this committee, which was composed of Steve Ballou, Peggy Barton, Joe Bonaccorso, Richard Bond, Dona Caldwell, Harris Seidel, John Solvie, Mike Van Den Bosch, and me. Chris Dickey facilitated two workshops for the Committee that culminated in a Strategic Plan, which is scheduled (at this writing) to be fine-tuned by the Board of Directors on January 19. After the plan is finalized, it will be posted on the ABC website, and we plan to publish an article in a future edition of *The Certifier*.

Two new certification programs are presently under development, biosolids and plant maintenance. The Biosolids Task Force, chaired by Bill Toffey, is currently working on the analysis of the survey results and should have the analysis and results finished in January. The next step is to finalize the need-to-know criteria. They plan to complete question development and validation in 2007. John Solvie chairs the Plant Maintenance Task Force, which is in the process of developing its job survey.

One goal I set at the beginning of the year was to continue to develop and maintain the ABC standardized certification exams. Working in tandem with ABC staff members Suzanne De la Cruz and Scott Harter, the V&E Committees updated the following standardized exams: Wastewater Treatment I-IV, Collection System I-IV, Physical/Chemical Industrial Waste I-IV, and Water Laboratory Class III. There were 476 new

questions added to the Item Bank, and a portion of the existing Item Bank was reviewed.

In closing, I would like to present a synopsis of additional goals I had for 2006 and the current status of each:

- Continue Computer Simulation De-



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velopment: This is a work in progress. I have signed a contract relating to the development of the necessary software.

- Market Online Exams: Online exams have been discussed with various members during outreach meetings, and information concerning these exams has been published in *The Certifier*.

- Continue to Reach Out to Member and Non-member Programs: There were three meetings held with individual programs, and one joint meeting held in the northeast. Two programs joined ABC that had been visited during previous years, Arizona and West Virginia.

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**Water Treatment V&E Committee** - Gerald Samuel, Alberta Certification Advisory Committee

## ABC Testing Program

ABC exams are administered by voluntary or mandatory programs in the following 35 states and 10 Canadian provinces/territories. (Please note that there may be more than one certification program in a state or province. In some cases only one of the programs uses ABC exams.)

### US States

- |                |                   |                    |                |
|----------------|-------------------|--------------------|----------------|
| 1. Alabama     | 11. Kansas        | 21. New Hampshire  | 31. Texas      |
| 2. Alaska      | 12. Kentucky      | 22. New Jersey     | 32. Utah       |
| 3. Arkansas    | 13. Maine         | 23. New York       | 33. Vermont    |
| 4. Colorado    | 14. Maryland      | 24. North Carolina | 34. Washington |
| 5. Connecticut | 15. Massachusetts | 25. Ohio           | 35. Wyoming    |
| 6. Georgia     | 16. Minnesota     | 26. Oregon         |                |
| 7. Hawaii      | 17. Mississippi   | 27. Pennsylvania   |                |
| 8. Idaho       | 18. Montana       | 28. Rhode Island   |                |
| 9. Indiana     | 19. Nebraska      | 29. South Carolina |                |
| 10. Iowa       | 20. Nevada        | 30. South Dakota   |                |

### Canadian Provinces/Territories

1. Alberta
2. British Columbia
3. Manitoba
4. New Brunswick
5. Newfoundland
6. Northwest Territories
7. Nova Scotia
8. Ontario
9. Prince Edward Island
10. Saskatchewan

ABC also provides exams to Guam, the Caribbean, and the tribal certification programs of Inter Tribal Council of Arizona, Native American Water Association, and New Mexico Environmental Finance Center. ❖

# Impact of Professional Background on Perceived Criticality of Job Tasks Performed by Wastewater Treatment Operators

by Suzanne De la Cruz, ABC Manager of Testing and Certification, and Linda Khun, ABC Testing Analyst

Licensure tests must follow prescribed steps to ensure that the test fairly evaluates a candidate's qualifications and that the tests are reliable and unbiased toward any demographic grouping. Conducting a job analysis (also called role delineation) is an essential first step in establishing the content validity of a licensing exam. The job analysis process identifies the most critical job tasks performed by operators. In addition, a job analysis often lists the capabilities (i.e., knowledge, skills, and abilities) required to perform critical job tasks. The results of the job analysis determine what is covered on the licensing exam and the weighting given to each exam section (De la Cruz et al, 2001).

To ensure the validity of the job analysis, job surveys are typically administered to job incumbents. Incumbents are one of the best sources for highly specific task information because they give the most accurate task ratings (Harvey, 1993; Wilson et al, 1990). Surveys should be sent to multiple incumbents in order to accurately reflect true differences in task performance due to experience, ability, and educational variation (Wilson et al, 1990). Including a wide variety of job incumbents with direct experience as operators provides essential documentation that the task list is a valid representation of the work performed by operators (De la Cruz et al, 2001).

Data generated from the job analysis process is the foundation for building a valid and legally defensible licensure examination. The job analysis provides essential evidence to support the content validity of an exam by linking the examination questions directly to work performed by operators. This documentation provides evidence of the job-relatedness and appropriateness of the exam for licensing operators.

Recent debate among wastewater treatment professionals has focused on the type of knowledge, and the depth of knowledge, required by a licensed operator to competently and safely operate a wastewater treatment plant. State licensing agencies of wastewater treatment operators typically require that operators document their experience and education, and demonstrate their knowledge by successfully passing an exam. Experience, education, and testing are all used to evaluate whether or not the applicant has the minimal level of competency to safely operate a specific class of treatment facility. Concern, however, has been expressed by different wastewater treatment professionals, including regulators, professional engineers, and trainers, that the content of wastewater operator licensure tests that are validated by job incumbents do not adequately test the knowledge, or test the right knowledge, of wastewater treatment plant operators and that additional content should be included in the exam independent of the results of the job analysis survey.

In 2002 ABC began a study in an effort to better understand the differences in opinion among the different wastewater treatment professionals about exam content. The purpose of this study was to examine the extent to which professional expertise impacts the perceived criticality of job tasks performed by wastewater treatment operators. The study also provides a mechanism to ensure the results of the job analysis process used by ABC are consistent with the expectations of all wastewater treatment professional groups.

In order to determine the degree of variation in perception, individuals from different professional groupings were asked to rate job tasks and capabilities required for a class IV operator (highest level) to competently operate a class IV wastewater treatment plant. Class IV operators, Class IV treatment plant managers, state regulators, wastewater treatment trainers, and professional wastewater design engineers completed the job analysis survey used by the Association of Boards of Certification (ABC) for its standardized exam for Wastewater Treatment Class IV operators. Results of the job analysis surveys were compared for the five professional groups

This study found a limited number of statistical differences between occupational groups. When looking at the frequency ratings for the entire group of respondents, no significant difference was found between professions for 96.4% (398 of 413) of the job tasks and capabilities. The seriousness ratings resulted in no significant difference between professions for 92.5% (382 of 413) of the job tasks and capabilities.

The results suggest that the understanding and perception of the job tasks for Class IV wastewater treatment operators

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## Past President's Message *continued from page 1*

- Begin a Dialogue on the International Marketing of ABC: A Task Force was formed to develop a plan for ABC to assist non-North American countries in advancing certification and recruit ABC members from those countries. The Task Force will finish its duties after the Membership and Strategic Planning Committees have finished tasks related to this issue.
- Continue Training Relevancy Dialogue: Course training relevancy guidelines for ABC's certification program are being developed by the Continuing Education Relevancy Task Force under the leadership of Cheryl Bergener.
- Promote Reciprocity: Kim Dyches is forming a task force to work on the issue of regional reciprocity.
- Assemble a Database of Subject Matter Experts for the Job Task Analyses: We put a link on our website where interested individuals could send ABC their contact information to participate in the Job Survey conducted this year, and 102 individuals signed up through the website.

I want to thank you all for the opportunity to serve ABC, and I look forward to seeing the Association continue to be the advancement of environmental certification. ❖

## Impact of Professional Background *cont. from p. 3*

were very similar among the five professional groups. ABC hopes to use the information obtained in this study to continue to foster relationships with each professional group involved in wastewater treatment. This cooperative effort will assist ABC in maintaining a comprehensive and effective testing program. Copies of the full report are available from ABC. ❖

### References Cited

1. De la Cruz, Suzanne, Michael Hamm, Larry Early, and Stephen Ballou. (2001). *A Guidebook on the Best Practices for Validating Operator Licensure Exams*. Association of Boards of Certification, Ames, IA.
2. Harvey, Robert. (1993). "Job Analysis." In M.D. Dunnette and L.M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology*. 71-163. Palo Alto, CA: Consulting Psychologists Press.
3. Wilson, Mark, Robert Harvey, and Barry Macy. (1990). "Repeating Items to Estimate the Test-Retest Reliability of Task Inventory Ratings." *Journal of Applied Psychology*. 75(2): 158-163.

## CALENDAR

### January 16-19, 2007

ABC Annual Conference  
Savannah, GA

### January 16, 2007

ABC Executive Committee Meeting  
Savannah, GA

### January 20, 2007

ABC Board of Directors Meeting  
Savannah, GA

### June 22, 2007

ABC Executive Committee Meeting  
Toronto, Ontario

### June 23, 2007

ABC Board of Directors Meeting  
Toronto, Ontario

### October 12, 2007

ABC Executive Committee Meeting  
San Diego, CA

### October 13, 2007

ABC Board of Directors Meeting  
San Diego, CA

*For information on ABC activities, call 515/232-3623, fax 515/232-3778, e-mail abc@abccert.org, or visit our web site at www.abccert.org*

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