American Academy of Health Physics
American Board of Health Physics

CHP N·E·W·S

AAHP EXECUTIVE COMMITTEE

Minutes of Meeting of January 24, 1999, Convention Center, Albuquerque, New Mexico

[Editors' note: The draft meeting minutes summarized here were provided by George Chabot, Academy Secretary. Although the Executive Committee has not formally approved them and will not have the opportunity until the Philadelphia meeting, they are presented in the interests of timely information exchange.]

President Ron Kathren called the meeting to order and welcomed members and guests. The Acting Parliamentarian confirmed the presence of a quorum. President Kathren noted proposed changes to the agenda; President-elect Herman Cember requested addition of two topics to the stated agenda.

President's Report

President Kathren referred to his report in the materials delivered to Committee members and made special note of the fact that there had been several ethics complaints during the year. He acknowledged the work of John Kelly and the Professional Standards and Ethics Committee who had handled the complaints fairly and expeditiously. Kathren summarized the three complaints that had been resolved and expressed the opinion that such matters were being handled in an appropriate fashion. He thanked Executive Committee members for their cooperation and work during his year as President of the Committee.

President-elect's Report

Herman Cember summarized activities that were ongoing with regard to accreditation of health physics academic programs. At a meeting of the Program Directors at the Minneapolis meeting, another committee was formed with the purpose of working out the techniques/methodologies for establishing the accreditation process. They met in Washington, D.C. and decided to recommend using the ABET 2000 (American Board of Engineering Technology) accreditation process.

Earlier ABET requirements were very prescriptive, requiring very specific subject matter. ABET 2000, in contrast, is outcome-based - i.e., the program should lead to qualified graduates. Richard Brey had sent out letters to the program chairmen, explaining the process and seeking input. Cember read the letter which stressed the outcome-based approach and stated that criteria developed at the meeting of Program Directors in Las Vegas would specify areas to be considered during accreditation reviews.

The Accreditation Committee would develop a guideline document for programs seeking accreditation. The document would contain recommendations as to methods to be used in assessing program outcomes and levels of academic rigor that programs should strive to achieve. The document would be developed in cooperation with the accreditation organization picked to administer our program. Most of the difficulty is in developing appropriate criteria and methods to assess outcomes. Program directors were expected to get their comments back to Richard Brey by the end of the current month, and another meeting would be arranged.

In a second item of business, Cember observed that he was in possession of a letter from the American Society of Safety Engineers (ASSE) regarding an intersociety liaison meeting that was to be held. R. Kathren summarized that the matter had come to his attention through Keith Dinger who had notified the ASSE that the AAHP was the proper group to participate on behalf of (certified) health physicists. Kathren had spoken with Tom Bresnehan of the ASSE, and a letter of invitation was sent to Herman Cember.

Cember was not able to attend the meeting because of snow and was in the process of attempting to obtain information as to what transpired at the meeting. He would report back to the Executive Committee when he received information.

Cember stated that he had a further interest, in his upcoming term as President, to deal with what he called the "soft side" of health physics. In particular, he was concerned with involvement in sociological/societal aspects of radiation safety and protection. He had been talking with Ray Johnson about this and hoped to make it a major thrust of his presidency.

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Contributions to the *CHP News* and the "CHP Corner" should be sent to Gary Kephart or Steve Rima.
(See AAHP ADMINISTRATIVE ROSTER, inside back page, for addresses & phone numbers.)

In a related matter, Cember noted that he has been reviewing various publications with an eye to correcting statements of misinformation. He cited an example in the Merck Manual that made the unqualified statement that exposure to x-rays caused cataracts. Cember felt that such statements may easily be misinterpreted by readers; he contacted an editor of the manual, and was told that they would correct the statement in the next edition.

Cember also cited three CDC documents that contained misleading information about ionizing radiation. He also contacted them to recommend that they have capable peer review of such documents and was told that they would institute such in the future. Cember encouraged Committee members present to be on the lookout for similar situations of poor or misleading information and to get involved in trying to remedy it by contacting the responsible parties.

R. Kathren encouraged H. Cember to take action in putting forth the names of Academy members to act on peer review groups to various organizations as situations arose in which our input might be valuable.

Past President's Report

Jerry Martin reported that, as had been authorized at the Minneapolis meeting, he had had 400 copies of the summary report of the Wingspread Conference printed and that only about ten copies remained after the meeting. He said that Gen Roessler had told him that a follow-up conference, with a somewhat different format and larger attendance than the original Wingspread Conference, was being planned and is tentatively scheduled for December of 1999.

Martin stated that the other task he had been involved in this past year was the Strategic Plan; he acknowledged the assistance of Gary Kephart in taking the lead to get the revision completed for this meeting. He stated that he had enjoyed his work with the Academy over the past ten years; although his tenure on the Executive Committee was ending, he offered to help out in the coming year if there was a need.

Ron Kathren acknowledged the fine work done by Jerry Martin and thanked him for it.

Secretary's Report

George Chabot reported that the minutes of the July 12, 1998 meeting of the Executive Committee and the minutes of the July 14, 1998 Open Meeting had been prepared, delivered to Committee members and earlier approved. The minutes of the Executive Session teleconference of Sept. 16, 1998 had been prepared and distributed to members.

Treasurer's Report

Jean St. Germain was unable to be present. Tom Buhl presented a brief report, summarizing the written report that was distributed to members, The following points were made:

1. For FY 1998 income exceeded expenses by $47, 069;

2. Interest on AAHP long-term investments was about 8%;

3. Some investments were moved from poor performers to better performers;

4. A number of CDs became due in the fall of 1998 and some will come due in the spring of 1999, and

5. The FY98 audit is being finalized. The initial report did not include one day, Aug. 31, 1998, a particularly active day on the stock market, and this information is now available.

Program Director's Report

Program Director Nancy Johnson summarized her report from the materials previously delivered to members. She reviewed some CHP and examination statistics, noting that there were still six individuals listed as power reactor- or dual-certified. They should have re-certified within the last year and apparently have not.

It was Johnson's feeling that current interest in the examination, based on the number of applications in process, is high. Johnson asked whether there were any changes to the roster included in the Director's report.

N. Johnson also observed that we should probably include, as agenda items for our meetings, reports from individuals acting as liaisons to other organizations. Ron Kathren agreed and noted that Frank Masse would be in later to address the Committee. He inquired whether Paula Trinoskey, as liaison to the NRRPT Board, wished to report anything to the Executive Committee.

Trinoskey stated that the NRRPT Board would be meeting on Friday in Orlando. She would get a report together for the June meeting of the AAHP Executive Committee. She also stated that the NRRPT was moving towards a re-certification process.

Kathren also informed the Committee that the Columbia Chapter had decided to change the name of their Distinguished Achievement Award to the Jack Corley Award.

Installation of 1999 Officers

President Kathren officially installed the new officers of the Executive Committee: Joe Alvarez (Director); Tom Buhl (Treasurer); Herman Cember (President); Chuck Roessler (President-elect), and Ron Kathren (Past President). Herman Cember assumed control of the meeting. Regis Greenwood agreed to continue as Acting Parliamentarian for the Committee.

Continuing Education Committee

Chairman Les Aldrich summarized his written report that had been distributed to members. He also stated that approximately 57 individuals had participated as attendees at the two Continuing Education courses held the previous day.

Aldrich summarized action of his committee to develop alternative mechanisms for diplomates to gain continuing certification credits.

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The Continuing Education Committee approved a motion to allow diplomates to carry over up to 10 credits from the previous re-certification cycle (assuming they had credits beyond those required, presently 64, in the previous cycle). Jerry Martin expressed concern that the ABHP would likely want some input on this proposal.

Nancy Kirner confirmed that the Board was interested in the topic, and R. Kathren suggested that N. Kirner bring the proposal back to the ABHP Board for discussion, and return to the Executive Committee with the Board's input at the Philadelphia meeting.

Report of the Professional Development Committee

Chairman Tom Essig summarized portions of his written report that was among members' materials. The application to the CESB needs to be resubmitted in annotated form along with required documents, such as ABHP Procedures Manual, Part 1 and Part 2 Exam Preparation Procedures, the By-laws, the Articles of Incorporation, and the like. Essig had communicated the status and requirements to George Vargo who had agreed to get the necessary materials together. Both Tom Essig and George Vargo planned to attend the annual meeting of the CESB on Feb. 9, 1999.

Essig reported that the Standard of Qualification/Practice for University RSO is well along. After some consultation among Tom Essig, Ron Kathren, and a representative of the Radiation Safety Officer Section of the Health Physics Society, it was decided to publish the document as a joint issuance of the AAHP and the Radiation Safety Officer section of the HPS.

The intent was also to publish the Hospital RSO SQ/P, which is not as far along as the University RSO document, as a joint issuance. Essig felt that the documents would be living documents that could be changed as necessary as time progressed. The documents would be signed by the President of the AAHP and by the President of the cognizant HPS Section. The method of promulgation of the documents had not been decided. A copy of the University RSO SQ/P has been delivered to the HPS-RSO Section President who has sent it out to a peer review committee.

Comments are expected back by the end of March, and Essig expected to present the document, in more-or-less final form, to the Executive Committee at the Philadelphia meeting. He also expressed the hope to have the Hospital RSO draft document available at that time.

C. Roessler suggested that perhaps the Medical Section of the HPS would be interested in reviewing the Hospital RSO document. Essig acknowledged that such might be appropriate, and also noted that it had been suggested that the AAPM might be interested in reviewing the document. Roessler also observed that the organization of Campus RSOs might be interested in the University RSO document. R. Kathren said he thought that organization was aware of the document. Essig said that he would pursue the matter.

P. Trinoskey also suggested that the State Radiation Control Directors might be a good resource for reviewing such documents. It was commented that the NRC generally prefers to endorse, where possible, an industry document.

Newsletter Editors' Report

Editors Gary Kephart and Steve Rima had prepared a written report that was in the members' materials. Kephart summarized activities since the Minnesota meeting. He noted that the workshop on construction of examination questions, planned for Albuquerque, had been scheduled for Mar. 26 and 27 and would be announced in the Newsletter (subsequently displaced by other newsletter materials). The information would also be forwarded to Scott Medling since he could likely get it out more quickly on the web page than would be possible in the Newsletter.

Kephart concluded by observing that no action had been taken with respect to the suggestion made at the San Antonio strategic planning workshops that the AAHP membership be surveyed to obtain additional member input into Academy planning activities. This would be a large job and would require one or more volunteers willing to organize the effort.

Report of the Webmaster

Webmaster Scott Medling was not present but had delivered a report by e-mail that was available to Committee members. The written report included a request that the Executive Committee appoint an ad-hoc committee to establish the conditions and restrictions that would apply to members who wanted to have their resumes posted on the AAHP web page. After some discussion President Cember appointed Nancy Kirner as Chairman of said ad-hoc committee and Scott Medling and Gary Kephart as members. C. Roessler offered that by the end of the day a decision would be made as who would be handling web-related activities for the HPS. (S. Medling had requested that the AAHP be allowed to locate its web server on the same machine with the HPS.)

As the last item in his report S. Medling had noted two unresolved questions - 1) whether our posting links to a commercial consultant would be consistent with Univ. of Illinois policy and 2) whether our charging a fee to post certain material on the web would likewise be consistent. G. Kephart stated that he would get answers to both of the above questions.

Report of the American Board of Health Physics

Chairwoman Nancy Kirner had submitted a written report that was part of the members' materials. She summarized results of the 1998 ABHP Examination. Considerable discussion revolved around quality assurance issues brought about by problems in grading of the 1998 Part 2 examination. The problem was precipitated by failures to assign credit for some problems to the proper individual within the spread-sheet being used; formula errors within the spreadsheet were at the root of the problem.

Following are some of the relevant comments that were part of the discussion.

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1) No individuals who were originally notified that they passed were later notified that they had failed.

2) Those who were falsely notified of having failed were re-notified by telephone within a week and by mail within about 2-3 weeks that they had passed the examination.

3) There was no possibility that the problems that occurred could have also happened in past years.

4) Use of a database may be more reliable than a spreadsheet in terms of avoiding some of the problems of the type encountered, and double entry of data would be desirable to avoid data entry problems.

5) Possibly the use of consulting personnel to assist in data entry would be helpful. The Board had discussed this and felt it was important that the Part 2 Panel Chair be comfortable with whomever or whatever resources were involved. They may consider using commercial help.

6) The Board has strengthened QA procedures and enhanced the opportunity for reviewing all results.

The Board reconsidered their earlier decision to allow eight hours for taking the Part 2 examination and changed their decision so that six hours will be allowed. The Board will also make available a standard formula sheet for use by the Part 2 examinees. Definitions or explanations will not accompany the formula sheet.

The Board is considering keeping Part 2 questions proprietary so that they can more freely reuse questions in subsequent examinations. There is also consideration being given to making Part 2 a multiple-choice examination. A Task Analysis Workshop was planned for Jan. 25th (at this Albuquerque meeting), and N. Kirner invited members of the Executive Committee to participate in that workshop.

The examination will continue to be designed such that a qualified candidate could complete the examination in four hours.

There was some discussion among members as to the desirability (or not) of not allowing Part 2 examinations to be released following administration of an examination and of changing the examination format to all multiple choice.

M. Slobodien and H. Cember expressed the opinion that having past exams available is a great educational value to candidates. Slobodien expressed a concern that the types of activities that we (health physicists) are involved in may not be adequately evaluated by a multiple-choice exam.

R. Kathren observed that the professional Engineer's examination will be all multiple-choice by the year 2001. Kathren, along with other members of the Environmental Engineering Committee, have written the (engineering) examination for 2001 and all the members of that committee believed the examination would be more effective than previous examinations in providing a comprehensive test of the candidates.

In response to questions, Kirner clarified that a candidate for the examination could still take Parts 1 and 2 of the examination in the same year. The statement that "Part I must be passed before Part II could be taken" applied to candidates who were applying to take Part II of the examination in a given year. An individual who took both parts in a given year and passed Part II but failed Part I could reapply to take Part I in a subsequent year.

Kirner also called members' attention to item 9 of her report that stated that the primary source of the Examination Preparation Guide, in the past distributed as hard copies to candidates, would now be the AAHP-ABHP web site; this change would realize a savings of about $8000 annually.

President Cember inquired, considering tendencies toward downsizing and people taking on additional responsibilities, whether we should add Industrial Hygiene to our Domains of Practice.

R. Kathren felt that we certify in Health Physics, and this is well defined. It was acknowledged that there were areas of overlap between health physics and industrial hygiene (e.g., ventilation, nonionizing radiation, air sampling).

Kirner suggested that the job task analysis that was upcoming should highlight some of these areas of overlap. M. Slobodien suggested that it would be desirable to include results of the job task analysis on the web, if such become available.

AAHP Strategic Plan

Gary Kephart called attention to the written revision to the Strategic Plan contained in members' printed materials. Kephart had incorporated ideas and suggestions of individuals and other organizations in making revisions.

A motion was made (Kirner, Kathren) to adopt the Strategic Plan with the elimination of some wording within Goal 3 of the Plan which presented liability concerns. Members agreed with a suggestion from G. Kephart that the Strategic Plan should be published on the web.

AAHP Technical Session in Philadelphia

Ron Kathren reviewed his activities related to preparation for the AAHP Technical Session to be held in Philadelphia. He has been negotiating with the DOE to sponsor a full day on the DOE-funded research that is being conducted east of the Urals in the Russian Weapons Complex.

Model Legislation - Industrial Hygienist/Safety Professional Title Protection Act

Ron Kathren stated that Jim Tarpinian has been following this topic. There has been some proposed legislation to protect the titles of Industrial Hygienist and Safety Professional. The legislation would forbid someone in the state from using the title unless they were actually so qualified.

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Our interest would be in getting the title of health physicist added to such legislation.

The implication would be that an individual would have to be a CHP in order to use the title of Health Physicist. R. Greenwood, based on his experience with legislation that is pending in Ohio, suggested that it would be appropriate to use the model used by the industrial hygienists (which allows for definition of industrial hygienist and certified industrial hygienist) so that both health physicists and certified health physicists would be defined within the legislation.

Greenwood is working on model legislation and will transmit a copy to President Cember who will communicate with HPS President Keith Dinger to arrange for appropriate distribution to the health physics community or other action.

NRC Proposed Rulemaking and Policy Statement, Medical Use of Byproduct Material

Nancy Kirner summarized activities described in her written report. An ABHP representative, Ed Maher, attended a workshop at NRC Headquarters. The issue of developing a certification examination for RSOs at medical institutions was discussed and Maher was present to represent the AAHP/ABHP interests. It was suggested (in the Executive Committee meeting) that Richard Vetter might also be a good person to have involved as a representative in this process.

Kirner also expressed the Board's concern with the decision by the Executive Committee to sponsor the ABMP. She cited George Vargo's letter to Ron Kathren, submitted at the request of the ABHP, requesting the reconsideration of Academy sponsorship of the ABMP.

After additional discussion, R. Kathren suggested that we table this issue until the Philadelphia meeting. He felt it was important that Jean St. Germain, who had been instrumental in promoting the Academy sponsorship of the ABMP and George Vargo be present to discuss the issue. He also suggested that Dr. Kahn and Bill Hendee be invited, individually, to address the Executive Committee.

Considerable discussion followed regarding the topic of sponsorship of the ABMP and the ABHP's potential role in developing a certification for Medical RSOs in association with the NRC's interests.

Address by Syd Porter Representing HPS History Committee

As Chair of the History Committee of the Health Physics Society, Syd Porter inquired as to whether the Executive Committee felt that the History Committee should be including AAHP items in the archives, including photos and videos. Members were supportive of the idea and a motion was made (Kathren, Roessler) to accept the offer of the History Committee to include AAHP historical items in the materials being collected.

C. Roessler suggested an amendment that we actually urge the HPS History Committee to include/cover the history of the AAHP in its compilation of the history of health physics.

F. Masse - Discussion of Possible Joint Radiation Safety Conference

Frank Masse, as liaison to the HPS, was asked to discuss progress in this matter. He informed members that he had talked with a number of groups and individuals over the past year and had just concluded a meeting with the HPS Board where this issue was discussed.

There seemed to be a consensus among potential participants with whom Masse had spoken that the most important gain would be to bring the Conference of Radiation Control Program Directors (CRCPD) back "into the fold." That Conference has become a large and formally structured meeting in recent years; they meet typically in May but would be willing to move their meeting back to March or February to meet with us, at least least initially, at the HPS midyear meeting. The midyear meeting would be desirable because it could focus on issues that were important to the Program Directors. Also, given the smaller size of the midyear meeting compared to the annual meeting, there would be more room to accommodate the CRCPD. One complication may be that the ALARA Conference that is planning on meeting with the HPS at the HPS midyear meeting in two years is now talking about having a joint meeting annually, rather than every two years. This might make it difficult to work out a convenient meeting with the CRCPD.

Based on schedules of organizations involved, it probably would not be before 2003 that we could arrange a joint meeting.

R. Kathren inquired about possible interactions with other groups such as the NRRPT and the Campus RSOs. Masse said that the next Campus RSO meeting would be at MIT the week before the annual HPS meeting. He did not feel that that group had a significant impact on attendance at the HPS meetings. The NRRPT has always used the HPS as a meeting base, and Masse expected that to continue. In terms of avoiding scheduling conflicts and allowing Academy members to participate fully in the HPS meeting, Masse suggested that the Academy might also think about the approach that the Academy of Medical Physics takes in conducting its business at the meeting location following completion of the (AAPM) meeting.

Getting all involved organizations together for a single "super" meeting is something to work towards, but at present the biggest need seems to be to get the CRCPD to be more involved with us and us with them. In response to a question from C. Roessler regarding participation of the NRRPT in the HPS meeting, Masse suggested that the NRRPT could be encouraged to put on a session in much the same way that the various Health Physics Society Sections now do.

Masse expected to have things more solidified by the Philadelphia meeting. He invited suggestions and/or comments from the Committee members.

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Invitation to Participate in International Conference

Ron Kathren informed members that he had received a letter that had invited the AAHP to contribute to an international conference that would address the topic of Bridging Radiation Policy and Science. Several international groups were sponsoring the meeting, and the AAHP was being asked to also act as a sponsor. If we agreed, we would be given a position on the Organizing Committee for the conference.

The letter requested $10,000 of support. The HPS recently voted to appropriate $10,000 for support of this same conference. Considering the size of the membership of the AAHP relative to the HPS, R. Kathren suggested that we might contribute about $2000. Topics to be covered included such things as the LNT hypothesis, carcinogenesis, and the roles that international groups and scientific organizations, such as the ISO and IAEA, should play in setting radiation protection policies.

The goal is to educate and inform and, in particular, to come up with a document that would set the stage for the legislation and policies setting. A motion was made and passed to accept the invitation of the Organizing Committee to sponsor the conference (Bridging Radiation Policy and Science), to serve on the Committee, and to allocate up to $2500 as a grant to the conference.

Chuck Roessler clarified a point regarding representation by noting that funding sponsors would have representatives on the Advisory Committee, separate from the Organizing Committee, and that the Program Committee would be selected by the Advisory Committee in conjunction with the Organizing Committee. After some additional discussion President Cember appointed R. Kathren to act as our representative to the (Advisory) Committee, and M. Slobodien was appointed as alternate representative.

ALSO IN THIS ISSUE:

Why Does the Pass Rate Vary So Much on Part II?

Nancy Kirner, ABHP Chair

This is a question that the Board has been asking itself since I can remember. Are there "hard" and "easy" tests? Do the graders respond to the previous years' results and grade harder or easier to even out results? Do the members of the panels try to make hard exam questions? Are the candidates not as well prepared one year compared to the next? Is there an association with odd- and even- year examination dates? I've probably heard all the theories. This article discusses what the Board is doing to achieve fairness and consistency in its examination process.

In 1996, the Board had experienced several years of widely varying performance on its Part II exam and decided to ask Assessment Resource Center (ARC), the consultants for its Part I exam, to analyze the situation. About a year later the Board was told that each year the Board -- inherent in its examination process -- offers candidates the opportunity to take one of a possible 70 combinations of the Part II exam.

ARC went on to state that not only are the questions different from year to year and from candidate to candidate; but also the skills evaluated are different from year to year. Additionally, ARC noted there was variation in the grading of the exam from one grader to the next. These observations have caused the Board to examine in detail the very foundation of its examination process.

One of the easiest and quickest areas to improve dealt with the graders. The Board instituted a policy whereby a Grading Question Leader would serve to achieve consensus among the three graders on each question. Differences in interpretation would be tolerated, with justification, but the overall goal is to seek centrality of grades on each question. Additional effort is being placed on developing more uniform grading guidance related to partial credit for nearly correct answers. For the most part, improved grading has been demonstrated in both the 1997 and 1998 examinations.

The examination itself is thought by many to be the primary cause for variation in performance. The Board is approaching this area with a 2-pronged effort. As it always has, the Board is first demanding strict adherence to its existing policies regarding question development. Additional quality assurance reviews have been added to better ensure that only valid and relevant questions appear on the exam. There is also additional emphasis placed on ensuring that the "well-prepared, minimally qualified candidates" can actually answer each question in the time allotted - and that there IS a valid answer for each question. Those pesky and distracting typographical errors, although not eliminated entirely, have been significantly reduced by applying additional emphasis on quality assurance reviews. The Part II Panel performs a tremendous amount of work in developing a new Part II Exam every year and in doing the lion's share of the grading of the questions. They, and their Part I Panel counterparts, are truly the backbone of a vital and valid certification process. (Continues)

The Board cannot express its gratitude enough to those dedicated and able professionals.

The Board is calling the second prong of its improvement program "Re-engineering Part II." This program is being led by George Vargo, Past-Chair of the Board, in partnership with a professional psychometrician (and they talk about our jargon) from Credentialing Services, Inc., the firm that guided the American Board of Medical Physics in the development of their examination.

The first step in the process is a Job Task Analysis (JTA) that began at this year's Mid-Year Meeting in Albuquerque. If you are one of the lucky CHPs to receive what will be a rather lengthy questionnaire about what you do and how you do it, PLEASE complete the questionnaire and return it. This exercise forms the foundation for developing examination specifications. Even without the re-engineering effort, a JTA would have been needed this year just because the last one was conducted approximately 5 years ago.

After the JTA is completed, skills will be identified and examination specifications developed. It is likely that at the end of this multi-year effort, a new Part II examination will emerge that could be mostly machine scored and will likely consist of more questions that everyone will need to answer. The outcome is not yet defined, but the Board has started down the path to what will be a more robust (valid and reliable) examination.

Another variable in examination performance is the pool of candidates who sit for the exam. While the Board has little control over who applies to become certified, it has, nonetheless, changed the minimum qualifications of those who are eligible for certification within the past few years. Whether or not the requirement for a B.S. degree (without the possibility to substitute experience for the degree) has evened out performance on the exam is anyone's guess. In a poll of candidates a few years ago, the only positive correlation with passing the exam was found with the amount of study that candidates admitted (swing point was around 300 hours). There was a negative correlation with the highest degree attained, and no correlation with taking formal prep courses.

A MERMAC analysis of Part I questions -- a very rigorous and robust statistical analysis for validating questions -- shows that overall candidate performance on some very fundamental questions in radiological physics has progressively declined over the last three years. In fact, there is a clear trend that shows that some of our historically most reliable predictors of overall performance have showed a decline. This is a disturbing trend that indicates either a fundamental change in the candidate pool, or a shift in areas studies during preparation for the examination.

Whatever the reason for exam variations, over the last two years we have seen strong performance on Part II of the examination. It is interesting to note, however, that the pass rate on Part I is going down. Hmmm. What does that mean?

Report of Intersociety Credentialling Task Force Meeting May 7, 1999

On May 7, 1999, the second meeting of the Intersociety Credentialling Task Force was held in Des Plaines, Illinois at the headquarters of the American Society of Safety Engineers (ASSE). Herman Cember, representing the American Academy of Health Physics, and Ruth McBurney, representing the Health Physics Society, attended the meeting. The first meeting had been held in January. Dr. Cember had planned to attend that meeting, but was prevented from attendance by icy roads.

Background on the Task Force

The ASSE was concerned that there exists some degree of overlap and duplication of effort among several credentialling organizations that certify or otherwise credential various types of safety professionals. In addition, licensing bills have been introduced in several states that would impact the credentials under which certain safety professionals may work.

The ASSE decided to pull together a task force with representation from professional societies and associated certification organizations related to occupational health, safety, environment and ergonomic practices.

The main purposes of the task force being formed were to:

- **Provide** a forum for occupational health, safety, environmental and ergonomic interdisciplinary cooperation;

- **Evaluate** current certifications and credentials and develop definitions of various types of credentials;

- **Define** safety, Health, environmental and ergonomics practice in the next seven to ten years and assess how changes will affect those who practice in these fields;

- **Collect** data and develop definitions of practice and educational standards;

- **Compare** current certifications and credentials and recommend development of credentials not currently available to practice OEH&S functions;

- **Develop** a framework for creating new and revised credentials; and

- **Establish** an OEH&S clearinghouse for employers, government and general public, including professional definition of practice, educational preparations and certification.

CHPs who have insight or opinions relating to the task force objectives should convey them to President Cember.

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Committees

At the January meeting of the Intersociety Credentialling Task Force, two committees were formed and ask to report back at the May meeting. One committee was asked to summarize current credentials and develop definitions of credentialling. The other committee was tasked with defining practice and educational standards. In addition, each professional organization was asked to provide their views on changes foreseen in the safety, health, environmental and ergonomic practice in the next 7-10 years, and how those changes will impact the role and responsibility of practitioners in the field.

Each of the two committees reported on progress to date. The Committee on Credentials and Definitions of Credentialling presented a draft document containing certification-related definitions, which was discussed. Additional definitions and some modifications were recommended by the group. The committee on Definition of Practice and Educational Standards presented a compilation of credentials and credentialling organizations related to safety, health, environment and ergonomics.

Each of the organizations represented at the meeting were asked to discuss changes foreseen in the environmental, ergonomic, health and safety practice in the next 7-10 years and how these changes will impact the role and responsibility of practitioners in the field. The industrial hygiene representatives perceived that regulatory compliance would be less of a driving factor for safety issues and that companies are accepting a certain level of risk. More responsibility will be placed on the environmental health professional, and out sourcing of services will become more prevalent. They also see an increase in partnering (team problem solving with a mix of disciplines). The industrial hygienists felt that company human resource departments should be relying more upon certification to sort out the resource needs, and that professional qualifications should be more explicitly specified in contracts.

For the health physics profession, Dr. Cember and Ms. McBurney reported that several changes are anticipated to have an impact. With companies downsizing and changing focus, many radiation safety programs are combining with other safety programs or hazardous waste management. Health physics training programs are recognizing this change and the need for training in other disciplines for increased employability of their students. Other influencing factors include political issues dealing with acceptable levels of risk, and an increase in the use of non-ionizing devices (necessitating a working knowledge of laser and RF safety). The increase in the amount of outsourcing of services (and accompanying constant job justification) will demand that health physicists have good marketing skills and the ability to reestablish credibility on a continual basis. Multinational companies and a global economy may also impact the profession.

The subcommittees were asked to continue to work on their charges. One charge that was added to Subcommittee 2 was to compile a list of appropriate degree titles in the health, safety, environmental and ergonomics fields. Each group represented on the task force was asked to evaluate the draft definitions and to develop a perception of who each organization is versus how it is viewed from outside, including standards and criteria for practicing the profession. Information on this will be solicited from each credentialling group. Communication among the organizations and feedback are important aspects of the process. Formalized definitions were requested from each organization. One of the products to be developed from this information is a body of knowledge and clearinghouse for information on the various certifications, including:

* Curricula
* Role delineation
* Official definition
* Standards of practice

These are to be compiled in time to review at the next meeting, which will be at the headquarters of the American Industrial Hygiene Association in Fairfax, VA on October 29, 1999. The subsequent meeting is planned for March 9, 2000 in Atlanta, GA.

The other organizations which ASSE invited to contribute to these efforts include:
American Board of Industrial Hygiene
American Industrial Hygiene Association
American Board for Occupational Health Nurses
American College of Occupational and Environmental Medicine
American Conference of Governmental Industrial Hygienists
Board of Certified Safety Professionals
Board of Certification in Professional Ergonomics
Health Physics Society
American Academy of Health Physics
Human Factors and Ergonomics Society
National Association of Environmental Professionals
National safety Management society
System Safety Society
U.S. Department of Labor

Call for CHP Volunteers

The ABHP Part I Panel will be holding a passing point workshop at the HPS Annual Meeting in Philadelphia. The workshop will be on Monday June 28 from 1:00 to 5:00 PM. We hope to have about 20 CHPs participate in the passing point exercise. Participants will receive 4 Continuing Education credits toward re-certification. If you are interested in attending, please contact Nancy Johnson at (703) 790-1745, or AAHP@bukinc.com.

Along similar lines, Glenn Sturchio is looking for assistance in proctoring the certification examination at the meeting (Also on Monday, June 28, 1999). He is only asking for a one-hour commitment IF he can arm-twist 14 proctors to assist him. Glenn can be contacted at (732) 594-6267, glenn_sturchio@merck.com.

Useful Equations and Constants

Useful Constants and Conversions

Avogadro's Number	6.023×10^{23} mole^{-1}
Planck's Constant	6.625×10^{-34} J s
Volume of Ideal Gas (STP)	22.4 l mol^{-1}
Curie	3.7×10^{10} dps
Charge (e^{-1})	1.6×10^{-19} C
Roentgen (STP)	2.58×10^{-4} C Kg^{-1}
R	8.32×10^{7} ergs/°C gr mol
1 MeV	1.602×10^{-6} ergs
1 atm	760 mmHg
1 dps	1 Bq
W	33.7 eV/ion pair
Rad	6.242×10^{7} MeV/g
1 m^3	1000 liters
1 ft^3	28.32 liters
Standard Temperature	20°C
Standard Pressure	1 atm
1 barn (b)	10^{-24} cm^2
1 Sv	100 rem
1 Gy	100 rad

General

$$PV = nRT$$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$Q = AV$$

$$V = 4005\sqrt{V_p}$$

$$C = v\lambda$$

$$Q = hv$$

Ionizing Radiation

$$A = \lambda_a\ N$$

$$T_p^h = \frac{0.693}{\lambda_p}$$

$$T_e^h = \frac{\lambda_p\ \lambda_b}{\lambda_p + \lambda_b}$$

Ionizing Radiation (Cont.)

$$\frac{1}{T_e} = \frac{1}{T_b} + \frac{1}{T_p}$$

$$A(t) = A_0\ e^{-\lambda_p t}$$

$$\lambda_e = \lambda_p + \lambda_b$$

$$X_2 = X_1 \frac{d_1^2}{d_2^2}$$

$$SA(Ci/g) = \frac{1.129 \times 10^{13}}{T_p^h(s)\ \text{Atomic Mass}}$$

$$\dot{X}(d) = A\frac{\Gamma}{d^2}$$

$$\dot{X}(d) = \frac{\Gamma\ C_L\ (\theta_1 + \theta_2)}{d}$$

$$\dot{X}(d) = \pi\ \Gamma\ C_a\ \ln\left[\frac{\left(r^2 + d^2\right)}{d^2}\right]$$

$$D = 73.8\ C\ E_\gamma\ n_\gamma\ \Phi\ T_e^h\ \left(1 - e^{-\lambda_e t}\right)$$

$$D = 73.8\,C\,E_\beta\,T_e^h\left(1 - e^{-\lambda_e t}\right)$$

$$\dot{D} \approx 6CEN$$

$$N_{HVL} = \frac{\log_{10}(\eta)}{\log_{10} 0.5}$$

$$I = \beta\ I_0 e^{-\mu x}$$

$\beta = (1 + \mu x)$ Fe

$\beta = (1 + \mu x/3)$ Pb

$$K_{\mu x} = \frac{P(d_{pri})^2}{W\,U\,T}$$

Nonionizing Radiation

RF/Microwave Radiation

$$S = \frac{E^2}{120\pi} = 120\pi\, H^2$$

$G_{dB} = 10 \log_{10} G_a$

$$P_{ave} = P_{peak} \cdot PW \cdot PRF$$

$$S = \frac{4P_{ave}}{A}$$

$$S = \frac{P_{ave} \cdot G_a}{40 \cdot \pi d^2}$$

Laser Radiation

$$d_{1/e^2} = \sqrt{2} \cdot d_{1/e}$$

$$NOHD = \frac{1}{\phi}\sqrt{\frac{1.27\Phi}{MPE} - d_a^2}$$

$$NHZ = \sqrt{\frac{\rho_\lambda \,\Phi \cos\theta_v}{\pi MPE}}$$

$$OD = \log_{10} \frac{\Phi}{MPE}$$

Ultraviolet Radiation

$$E_{eff} = \sum E_\lambda S_\lambda \Delta\lambda$$

Statistics

$$\sigma_s = \left[\frac{S+B}{T_{S+B}} + \frac{B}{T_B}\right]^{1/2}$$

$$\frac{T_{S+B}}{T_B}\Big|opt = \sqrt{\frac{S+B}{B}}$$

$$L_C = 2.33\sigma_b$$

$$L_D = 2.71 + 4.65\sigma_b$$

$$\chi^2 = \frac{(N-1)S^2}{\bar{x}} = \sum_i^N \frac{(\bar{x}-x_i)^2}{\bar{x}}$$

Editor's note: In order to publish this "new" equation sheet in the Newsletter – so that it would be widely available to the profession – the Roster of ABHP officers , panel members, and committees was deleted from this edition. The information remains available from the Web Site at www.aahp-abhp.org, or by contacting Nancy Johnson at the Secretariat. The ABHP Roster reflects the true backbone of our organization and its hardworking contributors certainly deserve recognition. The omission was necessary but still unfortunate. - Gary

Miscellaneous Equations

$$\sigma_u^2 = \left(\frac{\partial u}{\partial x}\right)^2 \sigma_x^2 + \left(\frac{\partial u}{\partial y}\right)^2 \sigma_y^2 + \left(\frac{\partial u}{\partial z}\right)^2 \sigma_z^2 + \ldots\ldots$$

$$\chi = \frac{Q'}{2\pi\sigma_y\sigma_z u}\exp\left(-\frac{y^2}{2\sigma_y^2}\right)\left[\exp\left(-\frac{(z-h)^2}{2{\sigma_z}^2}\right)+\exp\left(-\frac{(z+h)^2}{2{\sigma_z}^2}\right)\right]$$

$$\dot{X} = \frac{2\pi\Gamma C}{\mu_{en}}(1-e^{-\mu_{en}R})$$

$$E'_\gamma = \frac{E\gamma}{1+\frac{E\gamma}{m_o c^2}(1-\cos\theta)}$$

$$A = N_s\sigma_s\,\phi(1-e^{-\lambda t})e^{-\lambda\tau}$$

$$N_2(t) = \frac{N^0{}_1\lambda_1}{\lambda_2-\lambda_1}[e^{-\lambda_1 t}-e^{-\lambda_2 t}]$$

$$T_{max} = \frac{1}{\lambda_2-\lambda_1}\ln\left[\frac{\lambda_2}{\lambda_1}\right]$$

Range of Alpha Particles	Range of Beta Particles	
$R_\alpha = 0.56E$ ($E<4$ MeV)	$R_\beta = 412E^{(1.265-0.0954\ln E)}$	($0.01<E<2.5$ MeV)
$R_\alpha = 1.24E-2.62$ ($4<E<8$ MeV)	$R_\beta = 530E-106$	($E>2.5$ MeV)

NOTICE TO CANDIDATES

Preceding is a copy of "Useful Equations and Constants." The Board is making this information available to candidates to guide them in their study of health physics. This listing of useful information will not be allowed in the examination room for Part I. but will be distributed by Proctors as part of the Part II examination materials. The Board believes that the information contained in this listing is correct but makes no warranties regarding its use in either the practice of health physics or the examination.