

DATED: DECEMBER 2, 1997

SIGNED BY: HUGH L. THOMPSON, JR.

Ms. Yvonne Sylva, Administrator
State Health Division
Nevada Department of Human Resources
505 East King Street, Room 201
Carson City, NV 89701-4797

Dear Ms. Sylva:

On November 18, 1997 the Management Review Board (MRB) met to consider the proposed final Integrated Materials Performance Evaluation Program (IMPEP) report on the Nevada Agreement State Program. The MRB found the Nevada program adequate to protect public health and safety and compatible with NRC's program.

Section 5.0, page 19, of the enclosed final report presents the IMPEP team's suggestions and recommendations. We request your evaluation and response to recommendations 1, 2, and 4 within 30 days from receipt of this letter.

Based on the results of the current IMPEP review, the next review will be scheduled in four years, unless program concerns develop that require an earlier evaluation.

I appreciate the courtesy and cooperation extended to the IMPEP team during the review and your support of the Radiation Control Program. I look forward to our agencies continuing to work cooperatively in the future.

Sincerely, */RA/*

Hugh L. Thompson, Jr.
Deputy Executive Director
for Regulatory Programs

Enclosure:
As stated

cc: Sharon Ezell, Deputy Administrator
State Health Division

Stanley R. Marshall, Supervisor
Radiological Health Section

Robert R. Loux, Director
Nuclear Waste Project Office

Ms. Yvonne Sylva, Administrator
 State Health Division
 Nevada Department of Human Resources
 505 East King Street, Room 201
 Carson City, NV 89701-4797

December 2, 1997

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cc: Sharon Ezell, Deputy Administrator
 State Health Division

bcc: Chairman Jackson
 Commissioner Dicus
 Commissioner Diaz
 Commissioner

Stanley R. Marshall, Supervisor
 McGaffigan
 Radiological Health Section

Robert R. Loux, Director
 Nuclear Waste Project Office

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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM

REVIEW OF NEVADA AGREEMENT STATE PROGRAM

August 25 - 29, 1997

FINAL REPORT

U.S. Nuclear Regulatory Commission

1.0 INTRODUCTION

This report presents the results of the review of the Nevada radiation control program. The review was conducted during the period August 25-29, 1997, by a review team comprised of technical staff members from the Nuclear Regulatory Commission (NRC) and the Agreement State of California. Team members are identified in Appendix A. The review was conducted in accordance with the "Interim Implementation of the Integrated Materials Performance Evaluation Program Pending Final Commission Approval of the Statement of Principles and Policy for the Agreement State Program and the Policy Statement on Adequacy and Compatibility of Agreement State Programs," published in the Federal Register on October 25, 1995, and the September 12, 1995, NRC Management Directive 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)." Preliminary results of the review, which covered the period March 6, 1993 to August 24, 1997 were discussed with Nevada management on August 29, 1997.

A draft of this report was issued to Nevada for factual comment on September 30, 1997. The State of Nevada responded in a letter dated October 27, 1997 (Attachment 1). The State's factual comments were incorporated in the final report. The Management Review Board (MRB) met on November 18, 1997 to consider the proposed final report. The MRB found the Nevada radiation control program was adequate to protect public health and safety and compatible with NRC's program.

The Nevada Agreement State program is administered by the Radiological Health Section (RHS) of the Bureau of Health Protection Services (BHPS), State Health Division, Nevada Department of Human Resources. Nevada's statute designates the State Health Division as the radiation control agency. Organization charts for the Division, the BHPS, and RHS are included as Appendix B.

At the time of the review, the Nevada program regulated 196 specific licenses, including a major decontamination service, broad academic programs, medical programs, radiopharmacies, radiographers, a small self-contained irradiator, and a non-operating low-level radioactive waste burial site. The program grew during the review period at a rate of about 6 percent per year, as evidenced by the increase in the number of licenses.

The review focused on the material's program as it is carried out under the Section 274b. (of the Atomic Energy Act of 1954, as amended) Agreement between the NRC and the State of Nevada.

In preparation for the review, a questionnaire addressing the common and non-common indicators was sent to the State on March 28, 1997. The State provided a response to the questionnaire on July 30, 1997. During the review, discussions with the State staff resulted in the responses being further developed. A copy of the final response is included in Appendix C to this report.

The review team's general approach for conduct of this review consisted of: (1) examination of Nevada's response to the questionnaire; (2) review of applicable Nevada statutes and regulations; (3) analysis of quantitative information from the radiation control program licensing and inspection data base; (4) technical review of selected licensing and inspection actions; (5) field accompaniments of two Nevada inspectors; and (6) interviews with staff and management to answer questions or clarify issues. The team evaluated the information that it gathered against the IMPEP performance criteria for each common and non-common indicator and made a preliminary assessment of the radiation control program's performance.

Section 2 below discusses the State's actions in response to recommendations made following the previous review. Results of the current review for the IMPEP common performance indicators are presented in Section 3. Section 4 discusses results of the applicable non-common indicators, and Section 5 summarizes the review team's findings and recommendations. Suggestions made by the review team are comments that the review team believes could enhance the State's program. The State is requested to consider suggestions, but no response is requested. Recommendations relate directly to program performance by the State. A response is requested from the State to all recommendations in the final report.

2.0 STATUS OF ITEMS IDENTIFIED IN PREVIOUS REVIEWS

During the previous routine review, which concluded on March 5, 1993, eight comments and recommendations were made in five program indicators. Because of the significance of some of the review findings, a follow-up review was conducted in April 1994 and the results transmitted to Ms. Yvonne Sylva, Administrator, Nevada State Health Division, on September 21, 1994. The follow-up review resulted in the closure of six of the eight recommendations and the addition of two new recommendations. The team's review of the current status of these recommendations is as follows:

- (1) Although the State's written enforcement procedures prescribed escalated actions in general terms, they did not directly address serious first-time violations and lacked specific action levels for violations of varying degrees of severity. The NRC recommended that the enforcement procedures be strengthened by requiring escalated enforcement if the licensee has one or more serious violations directly relating to occupational or public health or safety, and by adding specific actions to be taken for violations of various levels of severity.

Current Status: The enforcement procedures were revised and further strengthened by new procedures dated August 7, 1997. The new procedures address the problem of a single, serious violation. Escalated enforcement actions prescribed by various severity levels include management-level meetings with the licensee, follow-up inspections, license restrictions, and temporary suspension or revocation of the license. This recommendation is closed.

- (2) During the March 1993 review, three inspections were identified in which appropriate escalated enforcement actions were not taken in response to numerous violations, including several repeats. At the time of the April 1994 follow-up review, the State had verified that the two licensees had taken corrective actions; however, the third case remained open.

Current Status: The State followed through with the enforcement on this medical private practice licensee by terminating the license and replacing it with a more restrictive medical facility license with requirements for a quality management plan program, a radiation safety committee with quarterly meetings, and an outside expert to serve as radiation safety officer. This recommendation is closed.

- (3) Nevada hospitals are required by regulation to provide dose calculations when reporting misadministration to the State so that each event may be analyzed and reported as necessary. However, in

three misadministration cases calculations were not provided; thus, the events could not be evaluated against the reporting criteria. We recommended that the State's administrative procedures be revised to improve instructions for evaluating, following and reporting misadministration and that letters be sent to all Nevada hospitals reminding them of the misadministration reporting criteria, including the requirement for dose calculation.

Current Status: The review team verified that the State revised and improved the instructions for handling misadministration. All medical licensees, including hospitals, were sent letters reminding them of the reporting requirements in the regulations. This recommendation is closed.

- (4) Several inadequacies were found in the State's system for tracking incidents and misadministration: (a) the incident log was incomplete; (b) some incidents shown as closed in the incident log lacked documentation in the files justifying closure; and (c) in some cases, copies of correspondence were found in the Las Vegas regional Office on events handled by that office that was not in the headquarters office files in Carson City. We recommended that the State improve their events tracking system to ensure complete incident logs, to ensure that all open items are properly documented before closure and to ensure proper dissemination of regional event correspondence to headquarters files.

Current Status: The team reviewed the incident files for the review period and found that all incidents were included in their tracking system, that all open items were properly documented before closure, and that all regional office event documentation is duplicated in headquarters files. This recommendation is closed.

3.0 COMMON PERFORMANCE INDICATORS

IMPEP identifies five common performance indicators to be used in reviewing both NRC Regional and Agreement State programs. These indicators are: (1) Status of Materials Inspection Program; (2) Technical Staffing and Training; (3) Technical Quality of Licensing Actions; (4) Technical Quality of Inspections; and (5) Response to Incidents and Allegations.

3.1 Status of Materials Inspection Program

The team focused on four factors in reviewing this indicator: inspection frequency, overdue inspections, initial inspection of new licenses, and timely dispatch of inspection findings to licensees. This evaluation is based on the Nevada questionnaire responses relative to this indicator, data gathered independently from the State's licensing and inspection data tracking system, the examination of completed licensing and inspection casework, and interviews with managers and staff.

The State maintains a licensee data base that can sort by a variety of data. During the review the team was provided various lists including: a priority listing for all licenses, licenses due for inspection during a given period in the future, inspections completed over a given time period, and reciprocity licensee inspections completed for a given period. The data base does not, however, retain historical data. As a result, the team was only able to obtain detailed inspection statistics from the data base for the current year.

According to the program manager, prior year statistics could be developed only by a manual search of the files. Biyearly statistics for budgeting purposes are generated prior to legislative sessions, however, the program does not retain the information in a readily available form due to infrequent demand. Based on the inspection program performance during the past year and the performance of the radiation control program generally during the review period, the team did not request or conduct a manual search.

The printout of the current year inspections showed 89 completed. This printout shows the inspection date, the date of the violation notice, the date of the licensee's response, and the date of the State's acknowledgment letter or inspection closing date.

The State's inspection frequencies were compared to IMC 2800 and verified to be of equal, or in most cases more frequent than, IMC 2800. The State requires more frequent inspection in some license categories as follows: hospitals and nuclear medicine private practice licenses are inspected on a two-year frequency as compared to NRC three-year frequency; portable gauge licenses are inspected at a three-year frequency as compared to NRC five-year frequency; and teletherapy licensees are inspected on a one-year frequency as compared to NRC's three-year frequency.

Two teletherapy license files were reviewed. One license was inspected at 1-1½ year intervals nominally; one inspection of the same license was conducted approximately three years after the previous inspection. The State priority was 1 for both licenses. The NRC inspection priority for a teletherapy program is 3. The RHS Supervisor indicated that the State will consider changing the inspection priority for teletherapy licenses to a 3.

The radioactive material's low-level waste (RAM/LLW) program manager provided the following information on reciprocity, which is maintained separately from the licensee database. The State issued 187 reciprocity authorizations to 23 out-of-state industrial radiography licensees for the period March 3, 1993, through June 9, 1997. During that period, six inspections were completed and one was attempted. All six completed inspections were of radiography licensees operating in the Las Vegas or Reno/Sparks areas. One licensee from Utah was granted authorization to enter the State 68 times, however, it was not inspected during the period because of the difficulty of travel to the remote areas of the State in which the licensee was working.

During the last 14 months, 18 radiography licensees were granted reciprocity. Ten conducted operations in urban areas and eight in rural areas of the State. There were four inspections of the licensees who operated in urban areas of the State and none of the licensees who operated in rural areas of the State.

The review team finds that the State has not met the frequency of IMC 1220 for the inspection of reciprocity licensees. The review team recommends that the State inspect a higher percentage of reciprocity licensees, including high priority industrial radiography licensees operating in rural areas.

New licenses are usually inspected six months after they are issued, provided radioactive material has been received by the licensee. The State telephones the licensee to determine if material has been received. If it has not, they defer the inspection until material has been received. Only one Nevada licensee experienced a delay of greater than one year in receiving material. This licensee was inspected within one year after the license was issued, but before radioactive material was received, which is sooner than required by the State's procedure.

The University of Nevada, Reno, was the only licensee identified by the team as overdue for inspection by the program's standards. Review of the file indicated that the last complete inspection was in September 1991. The University is an Academic Type B Broad licensee, assigned inspection priority 2, and it should have been inspected no later than April 1994. The State made a number of partial inspections at the University since 1991, but none of these inspections were brought to closure, or combined to form a complete inspection by State standards.

A review of the inspections completed printout showed that the State has inspected other licenses within their assigned frequency. The team finds that only one license was overdue for inspection during the review period. Overdue inspections thus do not exceed the evaluation criteria.

The State, by policy, does not extend the inspection interval for good licensee performance. Licensees may be inspected at more frequent intervals as the result of escalated enforcement action. Inspection intervals are returned to normal after the licensee shows improvement.

In 4 of the 26 files evaluated, a letter to the licensee informing of violations was mailed more than 30 days following the inspection. In one case, the letter was mailed 70 days after the inspection, the other three letters were mailed between 30 and 60 days after the inspection. Licensees are usually given 20 days to respond, and if their response is satisfactory, an acknowledgment letter is sent by the State and the inspection is closed.

Based on the IMPEP evaluation criteria, the review team recommends that Nevada's performance with respect to the indicator, Status of the Materials Inspection Program, be found satisfactory.

3.2 Technical Staffing and Training

Issues central to the evaluation of this indicator include the radioactive materials program staffing level, technical qualifications of the staff, training and staff turnover. To evaluate these issues, the review team examined the State's questionnaire responses relative to this indicator, interviewed program management and staff, and considered any possible workload backlogs.

The RHS organization chart shows that the section has a total of 14 positions, including the secretarial positions and the Las Vegas Regional Office. The Radioactive Materials/Low-Level Radioactive Waste (RAM/LLW) program manager and the Mammography/X-ray program manager in Carson City are classified as Radiological Staff Specialist, while the Las Vegas office manager is classified as a Supervising Radiation Physicist. These positions report to the RHS Supervisor. The five technical staff members are classified as Radiation Control Specialists.

Four of the technical staff members are cross-trained between the x-ray and RAM/LLW programs. All technical staff members participate in event response activities. The RAM/LLW Radiological Staff Specialist and one Radiation Control Specialist in Las Vegas are primarily devoted to license reviews and inspection of radioactive material licensees, including the low-level waste disposal site and licensees authorized to possess and use materials not subject to the Atomic Energy Act. The remaining technical staff members are assigned primarily to other programs, and devote less than 50 percent of their time each to the agreement program. The distribution of effort results in 2.95 technical staff FTE dedicated to the RAM/LLW program. The RHS also has 3.5 FTE of secretarial staff. The FTE distribution between licensing and inspection effort appears balanced, as evidenced by the lack of significant

backlogs. At the time of the review, there were no vacant positions. The team notes that the RHS technical staff has been stable during the review period, with only one departure (due to retirement) and two new hires. Based on the program's lack of significant backlogs, the staffing level is sufficient to assure public health and safety.

The review team found that the technical staff positions require a bachelor's degree in the sciences, or an equivalent combination of training and experience. New staff members are assigned basic responsibilities until the training and experience necessary to handle more advanced responsibilities are obtained. They are provided training in the core NRC courses. They are also assigned to work with senior staff members to gain experience. Progression through the training and experience warrants their assignment to more complex responsibilities, however, they must demonstrate satisfactory performance in a formal assessment prior to being authorized to conduct independent inspections or license reviews. This general procedure is not, however, delineated in written form. The RHS Supervisor does develop an individual training and qualification plan, usually in memo form, for each new staff member. The individual plan considers the past training and experience of the new staff member, and the performance requirements of the specific position. Senior staff members have completed their training and qualification plans.

The two new staff members hired during the review period hold associate degrees and have considerable experience in a radiation field. One staff member has 14 years experience in a non-Agreement State radiation control program, including nine years as the program director; the other has 15 years experience in medical x-ray. The team finds that the qualifications of the new hires are adequate. The team also finds that the lack of a written general training and qualification procedure has not adversely affected the development of the new staff members during the review period. The review team recommends that the general training and qualification procedure be adopted in writing. During the onsite review, the team suggested that the State wait until the NRC-OAS joint working group on training issues their final recommendations. The working group recommendations should be considered when developing the written plan. It was noted at the MRB meeting that the working group report was issued October, 1997 and was provided to all States at the October 1977 Agreement State Meeting.

The RHS, with the support of the BHPS and the State Health Division, has received for the first time a budgetary allotment for training. The State plans to use this funding to complete the training of the new staff members, and to provide continuing training for experienced staff members.

Based on the team's finding and the IMPEP evaluation criteria, the review team recommends that Nevada's performance with respect to this indicator, Technical Staffing and Training, be found satisfactory.

3.3 Technical Quality of Licensing Actions

The review team examined completed licensing casework and interviewed the reviewers for 24 specific licenses. Licensing actions were evaluated for completeness, consistency, proper isotopes and quantities used, qualifications of authorized users, adequate facilities and equipment, and operating and emergency procedures sufficient to establish the basis for licensing actions. Licenses were reviewed for accuracy, appropriateness of the license and of its conditions and tie-down conditions, and overall technical quality. Casework was evaluated for timeliness, adherence to good health physics practices, reference to appropriate regulations, documentation of safety evaluation reports, product certifications or other supporting documents, consideration of enforcement history on renewals, pre-licensing visits, peer or supervisory

review as indicated, and proper signature authorities. The files were checked for retention of necessary documents and supporting data.

The licensing casework was selected to provide a representative sample of licensing actions which had been completed in the review period and to include work by all reviewers. The cross-section sampling included all of the State's major licenses as defined by the State in the questionnaire and included the following types: broad academic; decontamination services; in vitro laboratory; industrial radiography; small irradiator; medical (private practice, teletherapy, and high dose remote afterloader); nuclear pharmacy; well logging; ordnance testing; and low-level radioactive waste disposal. Licensing actions included 10 new licenses, 4 renewals, 5 amendments, and 5 terminations. A list of these licenses with case-specific comments can be found in Appendix D.

The review team found that the quality of the State's licensing actions is excellent. No discrepancies were found in the 24 files reviewed. The licensing actions were also timely, with uncomplicated actions completed within 60 days, including the exchange of correspondence. Unusual or complex license actions required longer completion times.

The State's license termination procedures are based on the NRC's Site Decommissioning Management Plan (SDMP) cleanup criteria, the tables in NRC Regulatory Guide 1.86 on acceptable surface contamination levels and other guidance such as NUREG/CR-5849 on Conducting Radiological Surveys in Support of License Termination and NRC PGD FC 83-23, "Termination of Byproduct, Source, and SNM Material Licensees." One major facility was decommissioned and the license terminated during the review period when Aerojet-General closed the ordnance testing site at Nellis Air Force Base. In reviewing the casework, the team found that the State had required an extensive decommissioning plan and had carefully monitored the work performed by the licensee and the contractor. All records of transfer of material were on file, as well as the State's confirmatory measurements taken during several on-site inspections during the decommissioning activities.

From discussions with the reviewers and from casework reviews, the team found that the State makes pre-licensing visits for complex licensing actions. It was also noted that complex new licenses or renewals are personally delivered so that licensees have the opportunity to discuss the license and their obligations with a State representative.

Licenses are issued for five years and State policy requires a complete new application each time the license is renewed. The team noted during the evaluation of the casework that supporting documentation for new and renewed licenses was current and complete. It was noted that every new or renewed license is tied through license condition to an attached cover letter which clearly explains the licensee's responsibilities when the licensee receives the license. The MRB noted that this cover letter is a good practice.

The review team found that the State uses the latest NRC standard license conditions as the basis for their own standard conditions. The review team also noted that the reviewers use licensing checklists based on the NRC's current checklists. The State has copies of the current licensing guidance, including NRC Regulatory Guides, NUREGS, and information notices, supplemented with other professionally recognized health physics reference documents. The team noted from reviewing the licensing checklists that the licensee's compliance history is reviewed before license amendments or renewals are approved.

The team found that the deficiency letters, cover letters, and other types of licensing correspondence were complete and well-written with proper regulatory language and were issued promptly.

All staff, including those in the Las Vegas office have licensing responsibilities. After the license is written, the license and copies of the application and all background documents are forwarded to the lead reviewer in Carson City for peer and supervisory review. Major actions are also reviewed by the Supervising Radiation Physicist in the Las Vegas office. After the peer and supervisory reviews, the license is again reviewed and signed by the RHS Supervisor. In his absence, the lead reviewer has signature authority.

Based on the IMPEP evaluation criteria, the review team recommends that Nevada's performance with respect to the indicator, Technical Quality of Licensing Actions, be found satisfactory.

3.4 Technical Quality of Inspections

The team reviewed the inspection reports, enforcement documentation, and inspection field notes and interviewed inspectors for 26 materials inspections conducted during the review period. The casework included all six of the State's materials license inspectors, and covered inspections of various types including radiography, medical, academic, portable gauge, nuclear pharmacy, and teletherapy. Appendix E lists the inspection files reviewed in depth with case-specific comments. During the week of August 11-18, 1997, a review team member performed accompaniments of two State inspectors on separate inspections of licensed facilities.

The State's inspection forms are tailored to the type of license inspected. The forms were complete except for a section to remind the inspector to review previous incidents by the licensee. The forms contain questionnaires for use by the inspector to test the knowledge and understanding of the users. The questionnaires assure that the inspector asks questions appropriate to the type of licensee. The reports evaluated demonstrated that the inspectors complete the inspection forms. The team finds that the inspectors followed established State inspection procedures.

Of the 26 inspection reports evaluated, only four inspections were announced. The State's policy is to count any inspection in which the licensee was given less than 24 hours notice, as an unannounced inspection. The State notes that some licensees do not perform licensed operations daily, and believes that it is a more efficient use of inspection effort to assure that licensed operations will be in progress during an inspection. The State believes that significant problems in a licensed program would be difficult to conceal from inspectors when the licensee is given less than 24 hours notice of an inspection. Although this practice differs from NRC guidance, it is a reasonable approach. The review team found this policy acceptable.

Inspection reports were very high quality and the files were complete with all documents including letters, telephone call logs, license documents and amendment requests. Each report has the signature of the Radiological Staff Specialist or the Supervising Radiation Physicist indicating it was reviewed, and all correspondence is signed by the RHS Supervisor.

When violations are uncovered during an inspection, the inspector drafts a violation notice for the RHS Supervisor's signature. A standard letter, addressed to the licensee with the violation notice appended, is mailed to the licensee. The violation notice may also identify items of concern which are not violations (but for which a response from the licensee is expected), or contain recommendations, (for which a response is not expected).

Depending of the nature of the violations, the licensee's response, and the inspector's recommendation, the State may take additional measures to bring the licensee into compliance. For serious or repeated violations, a meeting with licensee management may be scheduled in the State office. For less serious violations, a repeat inspection at a reduced interval may be scheduled. If these methods fail, the State enforcement policy provides for an administrative hearing to revoke the license. There were no administrative hearings during the review period. The RCP does not have authority to levy and collect civil penalties (administrative fines) for violations of the radiation control regulations. Monetary penalties must be collected through action of the civil court.

Enforcement letters are written in appropriate regulatory language and are dispatched in a timely manner. The date the letter is sent is entered into the data base so that response due dates can be easily tracked.

If no violations are found during an inspection, the inspection is closed at the exit and the State does not notify the licensee of the findings in writing. The review team suggests that the State provide a letter, or a short form similar to the NRC Form 591, to the licensee indicating that no violations were found as the result of the inspection, when appropriate.

According to program staff, there is an ample supply of radiation survey instruments at both the Carson City and Las Vegas offices. At Carson City there are 3 Victoreen 450P ion chambers, 4 Ludlum micro/R meters, 3 Ludlum model 12 or 14c meters with 6 pancake probes for contamination surveys, 2 Eberline emergency kits with alpha, pancake, and end window probes. In addition, each office has an Apter Odyssey 6 portable multi-channel analyzer for isotope identification.

All survey meters are calibrated annually and are rotated so that they are calibrated at least at the frequency of the licensee inspected. The meters are calibrated by a private firm that uses NIST traceable standards.

All six inspectors have had supervisor accompaniments at least annually. The Compliance Inspection Fieldwork Inspector Evaluation form is maintained in the inspector's file.

A member of the review team conducted accompaniments of two Nevada inspectors prior to the team review. On August 13, 1997, one inspector was accompanied during an inspection of a portable gauge licensee in Carson City. The second inspector was accompanied on August 18, 1997, during an inspection of a portable gauge licensee in Reno. Both inspectors have extensive experience in x-ray programs, and at the time of the review, were being trained in inspecting radioactive materials licensees. Both inspectors had qualified to independently perform inspections of the gauge licensees, but had not yet qualified to inspect more complex licensees.

Both inspectors prepared well and performed thorough inspections of the licensees' radiation safety programs. The inspectors demonstrated appropriate inspection techniques including observations, interviews, review of records, and knowledge of regulations, although one inspector was reminded to cite the regulation or license condition for each item of non-compliance. The technical performance of the inspectors was satisfactory, and their inspections were adequate to assess the radiological health and safety program of the licensee. The results of the accompaniments were discussed with the inspectors and their supervisors. The accompaniments are identified in Appendix E.

Based on the IMPEP evaluation criteria, the review team recommends that Nevada's performance with respect to the indicator, Technical Quality of Inspections, be found satisfactory.

3.5 Response to Incidents and Allegations

In evaluating the effectiveness of the State's actions in responding to incidents and allegations, the review team examined the State's response to the questionnaire relative to this indicator and reviewed the incidents reported for Nevada in the "Nuclear Material Events Database (NMED)" against those contained in the Nevada casework and license files, and supporting documentation, as appropriate for ten incidents. The team reviewed the State's response to six allegations, of which NRC referred two allegations. A list of the incident casework with comments is included in Appendix F.

State procedures require an on-site investigation for significant incidents. The procedures do not distinguish between incidents and allegations. The RHS Supervisor coordinates with the Las Vegas field office Supervising Radiation Physicist on incident response. All incident reports and summaries are reviewed by the RHS Supervisor for close-out.

The review team found that, with the exception of reporting incidents to NRC the State responses were within the performance criteria. Notification to the NRC was provided in 1993 through the first half of 1995, for incidents that require reporting under State regulations. Although the State incident report log contains an entry space for recording notification to NRC, notifications were not made for incidents occurring in the second half of 1995 through the end of the review period. The reporting of incident information was discussed with the program management, who indicated that a combination of problems with the NMED computer software and altered priorities related to the office relocation resulted in a decision to delay the reporting to NRC of events the State considered to be of low significance. The State did not consider any of the events that occurred during this period to be of high significance, however, the team reviewed reports of one damaged and five lost or stolen moisture/density gauges. The team recommended that the State review the incident files back to the last event reported to NRC in 1995, and submit reports to NMED as appropriate. At the MRB meeting, the State commented that they had completed their review and had submitted the appropriate reports. No additional action is necessary and the State does not need to address this recommendation further.

Responses were prompt and well-coordinated, and the level of effort was commensurate with health and safety significance. Inspectors were dispatched for on-site inspections when appropriate. In general, the State took suitable corrective and enforcement actions and followed the progress of the inspection until close out.

The team reviewed the files of six allegations. Two of the allegations were referred to the State by NRC Region IV. The records indicated a response to the Region when requested. All six allegations were responded to promptly with appropriate inspections, follow-up, and close-out actions. The quality of the State's response was adequate. Persons making allegations are advised that their identity can be protected under State law, but the allegeder must request the identity protection in writing.

Based on the IMPEP evaluation criteria, the review team recommends that Nevada's performance with respect to the indicator, Response to Incidents and Allegations, be found satisfactory.

4.0 NON-COMMON PERFORMANCE INDICATORS

IMPEP identifies four non-common performance indicators to be used in reviewing Agreement State programs: (1) Legislation and Regulations; (2) Sealed Source and Device Evaluation Program; (3) Low-Level Radioactive Waste Disposal Program; and (4) Uranium Recovery. Nevada's agreement does not cover uranium recovery, so only the first three non-common performance indicators were applicable to this review.

4.1 Legislation and Regulations

4.1.1 Legislative and Legal Authority

Along with their response to the questionnaire, the State provided the review team with the opportunity to review copies of legislation that affects the radiation control program. Legislative authority to create an agency and enter into an agreement with the NRC is granted in Nevada Revised Statute Section 459. The Nevada State Health Division is designated as the State's radiation control agency. The review team noted that the legislation had not changed since being found adequate during the previous review, and found that the State legislation is adequate.

4.1.2 Status and Compatibility of Regulations

The Nevada Regulations for Control of Radiation, found in Chapter 459 of the Nevada Administrative Code (NAC), apply to all ionizing radiation, whether emitted from radionuclides or devices. Nevada requires a license for possession, and use, of all radioactive material including naturally occurring materials, such as radium, and accelerator-produced radionuclides. Nevada also requires registration of all equipment designed to produce x-rays or other ionizing radiations.

The review team examined the procedures used in the State's regulatory process and found that Nevada offers the public the opportunity to comment on proposed regulations and participate in public hearings before the Board of Health. Procedures also require the proposed regulations, and proposed hearing date, be publicized. Written response to all written public comments must be part of the staff presentation to the Board.

Regulations must be reviewed by the State Legislative Council Bureau before they become final. Regulations may be submitted at any time to the Nevada State Board of Health for adoption; however, adoption during certain periods of the biennium requires a second adoption hearing to create permanent regulations, making it difficult for the State to adopt all NRC amendments within the 3-year time period during which Agreement States are generally expected to adopt compatible rules. The team noted that while some of the regulations adopted during the review period were adopted after the 3-year period had expired, Nevada has other legally binding methods of applying regulatory requirements on a temporary basis as needed.

The team evaluated Nevada's responses to the questionnaire and reviewed the regulations adopted by the State since the 1993 review to determine the status of the Nevada regulations under the Commission's new adequacy and compatibility policy. The team found that the State addressed the following NRC regulation amendments:

- "Quality Management Program and Misadministration," 10 CFR Part 35 amendment (56 FR 34104) which became effective on January 27, 1992. The State adopted equivalent regulations for the quality management and misadministration rules prior to the current NRC decision to defer

consideration of these rules in making compatibility findings for Agreement States. Nevada intends to revisit the matter when NRC issues a revised Part 35 rule, compatibility designations for the new rule are established, and an effective date for Agreement State implementation has been set.

- "Licensing and Radiation Safety Requirements for Irradiators," 10 CFR Part 36 amendment (58 FR 7715) which became effective on July 1, 1993. There are no current Nevada licensees that are affected by this rule. The State plans to apply the requirements by license condition and adopt an equivalent rule if an application for an irradiator is received. NRC has previously found this approach to be compatible.
- "Definition of Land Disposal and Waste Site Quality Assurance Programs," 10 CFR Part 61 amendment (58 FR 33886) which became effective on July 22, 1993. In consideration of the closed status of the Beatty site, the State does not plan to adopt an equivalent regulation.
- "Decommissioning Record Keeping Documentation of Restricted Areas and Spill Sites," 10 CFR Parts 30 and 40 (58 FR 39628) that became effective on October 25, 1993. It should be noted that this rule applies to all licensees, rather than just those licensees required to file a decommissioning plan.
- "Self-Guarantee as an Additional Financial Mechanism," 10 CFR Parts 30, 40, and 70 amendments (58 FR 68726 and 59 FR 1618) that became effective on January 28, 1994. Note, this rule is designated as a Division 2 matter of compatibility. Division 2 compatibility allows the Agreement States flexibility to be more stringent (i.e., the State could choose not to adopt self-guarantee as a method of financial assurance.) If a State chooses not to adopt this regulation, the State's regulation, however, must contain provisions for financial assurance that include at least a subset of those provided in NRC's regulations; e.g., prepayment, surety method (letter of credit or line of credit), insurance or other guarantee method (e.g., a parent company guarantee). This rule has been redesignated as category D under the Commission's new adequacy and compatibility policy. The rule affects only one Nevada licensee and is being adopted by license condition.
- "Uranium Mill Tailings Regulations: Conforming NRC Requirements to EPA Standards," 10 CFR Part 40 amendment (59 FR 36026) that became effective on July 1, 1994. This rule is not applicable as Nevada does not regulate section 11(e).2 material under the Agreement.
- "Timeliness in Decommissioning of Materials Facilities," 10 CFR Parts 30, 40, and 70 amendments (59 FR 36026) that became effective on August 15, 1994. It should be noted that this rule applies to all licensees, rather than just those licensees required to file a decommissioning plan.

The State has expressed the intent to adopt the following regulations on or about March 1, 1998:

- "Preparation, Transfer for Commercial Distribution and Use of Byproduct Material for Medical Use," 10 CFR Parts 30, 32 and 35 amendments (59 FR 61767, 59 FR 65243, 60 FR 322) that became effective on January 1, 1995. The State will temporarily adopt the rule by license condition as necessary.

- "Low-Level Waste Shipment Manifest Information and Reporting," 10 CFR Parts 20 and 61 amendments (60 FR 15649, 60 FR 25983) that will become effective March 1, 1998. Agreement States are expected to have an effective rule on the same date.
- "Frequency of Medical Examinations for Use of Respiratory Protection Equipment," 10 CFR Part 20 amendments (60 FR7900) that became effective on March 13, 1995. Note, this rule is designated as a Division 2 matter of compatibility. Division 2 compatibility allows the Agreement States flexibility to be more stringent (i.e., the State could choose to continue to require annual medical examinations).

Nevada has not started to address the following RULEMAKINGS, but indicated the intent to adopt the rules prior to the due date (three years after the effective date given):

- "Performance Requirements for Radiography Equipment," 10 CFR Parts 34, (60 FR 28323) that became effective on June 30, 1995.
- "Radiation Protection Requirements: Amended Definitions and Criteria," 10 CFR Parts 19 and 20 amendments (60 FR 36038) that became effective August 14, 1995.
- "Clarification of Decommissioning Funding Requirements," 10 CFR Parts 30, 40, and 70 amendments (60 FR 38235) that became effective November 24, 1995.
- "Compatibility with the International Atomic Energy Agency," 10 CFR Part 71 amendment (60 FR 50248) that became effective April 1, 1996.
- "Medical Administration of Radiation and Radioactive Materials," 10 CFR Part 20.35 amendment (60 FR 48623) that became effective on October 20, 1995.
- "Termination or Transfer of Licensed Activities: Record Keeping Requirements," 10 CFR Parts 20, 30, 40, 61, 70 (61 FR 24669) that became effective on May 19, 1996. This requirement need not be in effect until May 19, 1999.
- "Resolution of Dual Regulation of Airborne Effluents of Radioactive Materials; Clean Air Act," 10 CFR Part 20 amendment (61 FR 65119) that became effective January 9, 1997.
- "Recognition of Agreement State Licenses in Areas Under Exclusive Federal Jurisdiction Within an Agreement State," 10 CFR Part 150 amendment (62 FR 1662) that became effective on January 13, 1997.
- "Criteria for the Release of Individuals Administered Radioactive Material," 10 CFR Part 20.35 amendment (62 FR 4120) that became effective on January 29, 1997.

As noted above, the rules "Decommissioning Record Keeping Documentation of Restricted Areas and Spill Sites," and "Timeliness in Decommissioning of Materials Facilities," apply to all licensees, rather than only to those licensees required to file a decommissioning plan. The State has applied the regulatory requirements of the rules as license conditions on the one Nevada licensee required to file a decommissioning plan, but has not addressed the requirements for the other licensees. The inconsistency was not identified until after the on-site review was completed and therefore was not discussed during the exit meeting. The issue was discussed during follow-up telephone

conversations with the State. On this basis, the team finds that the State needs to adopt both rules, or other generic legally binding requirements, in order to assure consistency with the compatibility designations of the new adequacy and compatibility policy.

The team recommends that, as provided by the implementing procedures ("Adequacy and Compatibility of Agreement State Programs," draft NRC Management Directive 5.9, Handbook Part V), State regulations or other generic legally binding requirements equivalent to the NRC rules be adopted as expeditiously as possible but not later than September 3, 2000 (three years after the September 3, 1997, [62 FR 46517] publication of the final policy).

Based on the IMPEP evaluation criteria, the review team recommends that Nevada's performance with respect to the indicator, Legislation and Regulations, be found satisfactory.

4.2 Sealed Source and Device (SS&D) Evaluation Program

At the time of the review, Nevada had no sealed source or device manufacturers nor were any applicants anticipated in the near future. The State, however, does not wish to relinquish the authority to regulate SS&D manufacturers in the future. The RHS Supervisor explained the State's provisional plan as follows:

Upon receipt of an application for a sealed source or device review by any licensee or after State licensure of a manufacturing company in Nevada, BHPS will begin to take steps to develop proposed regulations as appropriate, acquire additional staff and/or train existing staff and develop procedures to conduct timely sealed source/device review in accordance with NRC criteria. Considerations to hire new staff or train existing BHPS staff will address all technical disciplines such as mechanical and/or civil engineering expertise, radiation physics, etc., as necessary for this program.

Options for immediate implementation prior to full review program development include: (a) informal or contractual arrangements with other Agreement State(s) to conduct reviews or assist Nevada as they develop various components of the minimum program; (b) contract with an outside consultant to conduct the review; or (c) contract with NRC to conduct the review.

Funding for any of these options would be from revenue collected from the applicant.

The review team finds this approach acceptable and recommends that Nevada's performance with respect to the indicator, Sealed Source and Device Evaluation Program, be found satisfactory.

4.3 Low-Level Radioactive Waste (LLRW) Disposal Program

The State has no separate LLRW program, but instead regulates the LLRW license in the same manner as any other complex specific licensee. In the process of evaluating this performance indicator, the review team studied the State's responses to the questionnaire, evaluated the qualifications of the technical staff, reviewed the State's written procedures and plans, examined parts of the site closure plan and associated documents, reviewed surveillance and inspection reports, and interviewed the principal staff and managers assigned to the LLRW project.

The US Ecology LLRW site, located 11 miles south of Beatty, stopped receiving LLRW on January 1, 1993. This decision was formalized by a settlement agreement signed by the Governor on September 24, 1993. The site license expired December 31, 1992, but will remain in effect until the licensee completes their obligations specified in their license and regulations, in the "Beatty, Nevada, Low-Level Radioactive Waste Disposal Facility - Stabilization and Closure Plan - Rev 1," and in the lease agreement. Upon completion of the licensee's obligations, the US Ecology license will be transferred to the State of Nevada which will assume all oversight responsibilities and become custodian of the site. This transfer, according to State management, is expected to take place later this year or some time in 1998. Meanwhile, it was verified through file evaluations that the State continues to closely monitor closure activities such as final trench capping, completion of security fencing, and installation of trench markers. It is noted that this LLRW site pre-dates the waste site standards adopted in 10 CFR 61.

The team verified by evaluation of State records and the settlement agreement that the State has the funding (approximately nine million dollars) and plans to continue surveillance and necessary repair through inspections and environmental monitoring for 100 years. The State currently owns the 80 acre LLRW site and leases a 400 acre buffer zone surrounding the site from the U.S. Bureau of Land Management (BLM). The lease expires in 2007; however, the State is currently in negotiation to buy, trade for, or extend the lease before the expiration date. According to State management, upon transfer of the license to a yet to be named State agency, that agency will assume the responsibility for control of all activities on the site indefinitely.

4.3.1 Status of Low-Level Radioactive Waste Disposal Inspection

The State continues to inspect the facility periodically for trench slumping, security, posting, environmental sampling, and other requirements imposed on the licensee by the license, the regulations and the closure plan. The State's frequency of inspection for the Beatty site is one year, the same as specified in IMC 2800 and IMC 2401. However, due to public and political interests and the potential for changing conditions, the State often visits the site on a more frequent basis, conducting additional inspections during most visits. The annual inspection is considered complete when all elements required for closure and/or long term surveillance are covered. The review team examined the reports for nine inspections completed during the review period. There were no inspections in 1993. There were five inspections in 1994 to observe important closure activities such as trench filling and capping. Complete inspections were conducted in 1995, 1996, and 1997.

It is Nevada's policy to send written confirmation of inspection findings to the licensee within 30 days after the inspection, but only if items of non-compliance are found or if the licensee specifically requests the written confirmation. If there are no findings or concerns, the State policy is to present the results orally during the exit meeting. This was the case for the nine inspections conducted during the review period.

4.3.2 Technical Staffing and Training

In April 1995, the LLRW project manager retired and, because the site was no longer accepting waste, he was not replaced. LLRW functions are now handled by the RHS staff, under the direction of the RHS Supervisor. In addition to his other technical qualifications, the RHS Supervisor has taken all the NRC LLRW specialty courses and has 17 year's experience in regulating the site, both as a reviewer and inspector. The basic qualifications for the LLRW program staff are the same as for the RAM program staff, as described in Section 3.2, Technical Staffing and Training.

Because of its proximity to the site, the Las Vegas office performs most of the licensing and inspection activities, with their work reviewed by the RHS Supervisor. The Las Vegas Supervising Radiation Physicist has been directly involved in regulating the site since 1978. He was trained and accompanied on many inspections by the retired LLRW project manager. He has taken all of the pertinent courses and workshops given by the NRC and EPA. He, in turn, has trained and assessed another Las Vegas technical staff member to conduct inspection duties. This inspector now has five years of on-site inspection experience.

In addition, RHS has ready access to geologists, civil engineers, hydrologists, and environmentalists within various State agencies or by contract. The review team believes that the technical staffing and training is adequate to meet the criteria for this indicator.

4.3.3 Technical Quality of Licensing Actions

As explained previously, the site license expired December 31, 1992, but will remain in effect until the licensee completes their obligations set forth in the closure plan incorporated as a license condition on December 21, 1989, the regulations and the lease agreement. A licensee performance assessment was performed at the time the plan was submitted.

Only two licensing amendments were completed during the review period, and both were evaluated. The amendments were minor, involving a change of address, deleting some operational procedures, and clarifying by tie-down exactly what activities the licensee must complete prior to transfer of the license to the State. These licensing actions were done by senior staff and were fully acceptable to the review team. Details of the reviews are included in Appendix D.

The team found through observation in Carson City and interviews with the Las Vegas staff that applicable guidance documents such as the NUREGs that support 10 CFR 61 are available and used as needed.

4.3.4 Technical Quality of Inspections

The review team evaluated all nine of the on-site inspections conducted by the State during the review period. Two were evaluated in depth, and included in Appendix E. The Supervising Radiation Physicist and the inspector were evaluated during the two casework reviews. The inspection reports were complete, thorough, and in accordance with NRC guidance. Both had been reviewed by the supervisors in Las Vegas and Carson City.

No LLRW enforcement actions were needed during the review period because the inspections revealed no items of non-compliance. However, the State does have in place enforcement procedures with severity levels triggering specific escalated actions. These have been used effectively in the past to maintain licensee compliance, and the RHS Supervisor assured the review team that the enforcement procedures would be used as necessary.

Because of site closure, reduced activity, and the use of only senior inspectors, supervisory accompaniments specific to the LLRW program were no longer justifiable. However, the same inspectors are accompanied annually by policy for the radioactive material program. The review team finds this policy acceptable.

4.3.5 Response to Incidents and Allegations

There were no incidents or allegations pertaining to the LLRW program during this review period. There have been reports by the U.S. Geological Survey that they have found tritium at a monitoring well they operate in the buffer zone outside the fence. These reports, however, were never formally submitted to the State, only to the media. According to program management, RHS, the licensee, and a disinterested third party have continuously and independently monitored for tritium and other isotope migration and have found no evidence of release on or off-site. The review team evaluated records including the August 14, 1997, "Site Environmental Data Summary," which included more than 2,700 environmental sample results taken by several different parties, including State inspectors and contractors, during the period 1962 to 1997, and found no support for the USGS report. These environmental samples include soil, water, air, vegetation, and direct radiation, both on and off site.

Based on the IMPEP evaluation criteria for the above five performance areas, the review team recommends that Nevada's performance with respect to the indicator, Low-level Radioactive Waste Disposal Program, be found satisfactory.

5.0 SUMMARY

As noted in Sections 3 and 4 above, the review team found that Nevada's performance with respect to each of the performance indicators to be satisfactory. Accordingly, the review team recommended and the MRB concurred, in finding the Nevada program to be adequate to protect public health and safety, and compatible with NRC's program.

Below is a summary list of suggestions and recommendations, as mentioned in earlier sections of the report, for evaluation and implementation, as appropriate, by the State.

RECOMMENDATIONS:

1. The review team finds that the State has not met the frequency of IMC 1220 for the inspection of reciprocity licensees. The review team recommends that the State inspect a higher percentage of reciprocity licensees, including high priority industrial radiography licensees operating in rural areas. (Section 3.1)
2. The review team recommends that the general training and qualification procedure be adopted in writing. (Section 3.2)
3. The team recommended that the State review the incident files back to the last event reported to NRC in 1995, and submit reports to NMED as appropriate. At the MRB meeting, the State commented that they had completed their review and had submitted the appropriate reports. No additional action is necessary and the State does not need to address this recommendation further. (Section 3.5)
4. The team recommends that, as provided by the implementing procedures ("Adequacy and Compatibility of Agreement State Programs," draft NRC Management Directive 5.9, Handbook Part V), State regulations or other generic legally binding requirements equivalent to the NRC rules be adopted as expeditiously as possible but not later than September 3, 2000 (three years after the September 3, 1997, [62 FR 46517] publication of the final policy.) (Section 4.1.2)

SUGGESTIONS:

1. The review team suggests that the State provide a letter, or a short form similar to the NRC Form 591, to the licensee indicating that no violations were found as the result of the inspection, when appropriate. (Section 3.4)

Good Practice:

It was noted that every new or renewed license is tied through license condition to an attached cover letter which clearly explains the licensee's responsibilities when the licensee receives the license.

LIST OF APPENDICES AND ATTACHMENTS

Appendix A	IMPEP Review Team Members
Appendix B	Nevada Organization Charts
Appendix C	Nevada's Questionnaire Response
Appendix D	License File Reviews
Appendix E	Inspection File Reviews
Appendix F	Incident File Reviews
Attachment 1	Nevada's Response to Review Findings

APPENDIX A

IMPEP REVIEW TEAM MEMBERS

Name	Area of Responsibility
Richard Blanton, OSP	On-Site Team Leader Technical Staffing and Training Response to Incidents and Allegations Legislation and Regulations
Donald E. Bunn, California	Status of Materials Inspection Technical Quality of Inspections
Jack Hornor, RIV, WCFO	Technical Quality of Licensing Actions Sealed Source and Device Evaluations Low-level Radioactive Waste Disposal Program

APPENDIX B

NEVADA

BUREAU OF HEALTH PROTECTION SERVICES

HEALTH DIVISION

RADIOLOGICAL HEALTH SECTION

ORGANIZATION CHARTS

APPENDIX C

INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM
(IMPEP) QUESTIONNAIRE