

análisis con un diagnóstico en las instalaciones radiactivas médicas, basado fundamentalmente en la percepción que el personal de éstas y de la Autoridad Reguladora tiene sobre el estado de los componentes de la Cultura de la Seguridad en cada una. Como resultado se ha logrado caracterizar la actividad de la Autoridad Reguladora desde este punto de vista y se emiten recomendaciones prácticas a incluir en su trabajo cotidiano para incidir de manera más eficiente en el fomento de la Cultura de la Seguridad a corto plazo.

**Palabras claves:** cultura; seguridad; autoridad; inspecciones; autorizaciones

*One of the most important responsibilities of the Nuclear Regulatory Authorities (NRA) is to demand the establishment of a Safety Culture for practices with ionising radiations carried out in Cuba. However, the simple saying of such thing is not enough as to achieve this goal. That is why a*

*promoting action is needed within the relations of NRA with those installations object of its supervision. With the objective to evaluate to which extent the performance of the NRA, has influenced this attempt, an analysis has been carried out upon its actions on the last three years, on reglamentary inspections and authorization process on those second category radioactive installations in the Eastern territory of Cuba. According to this NRA representation the study has evaluated in which cases in this particular actions, the stated faculties granted to NRA in safety affairs has developed a Safety Culture promotion on radioactive installations. A diagnosis of medical radioactive institutions was added to the study, based mainly on the own personnel and NRA perception of Safety Culture level. As a result, activity of NRA has been characterized from this point of view and are emitted recommendations for its everyday work.*

**Key word:** culture; authority; regulatory; inspection; permitt.

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## ELABORAÇÃO DE UM FORMULÁRIO ELETRÔNICO PARA CADASTRO DE FONTES SELADAS

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O Departamento de Rejeitos Radioativos do Instituto de Pesquisas Energéticas e Nucleares, IPEN, recebe, anualmente, cerca de 400 fontes radioativas seladas, provenientes de aplicações industriais, médicas e pesquisa. Até o final do ano de 2002, já recebeu 7481 fontes que estão provisoriamente armazenadas em um depósito. Todas as informações de cada fonte eram armazenadas em uma planilha do Microsoft Excel 97, no qual o usuário preenchia com os dados de cada fonte em uma tabela simples, contendo mais de 25 colunas. O processo de armazenamento de dados era muito trabalhoso e a atividade deveria ser atualizada toda vez que era solicitada a emissão de um relatório. Para dirimir essas dificuldades, criou-se um novo formulário e um banco de dados, para cadastro de fontes seladas, utilizando-se, desta vez, mais recursos do Microsoft Excel. O formulário criado faz uso de listas «dropdown», possibilita a conversão de unidades (atividade e taxa de exposição), atualiza o valor da atividade, alimenta

o banco de dados automaticamente, entre outras facilidades. Além da economia de tempo, uma outra vantagem é que o próprio usuário pode introduzir novos campos e aperfeiçoar o sistema, sem que haja necessidade de se conhecer a linguagem de programação, pois a gravação de macros elimina essa exigência. O objetivo deste trabalho é apresentar o formulário criado, bem como o funcionamento e o procedimento adotado na sua elaboração.

**Palavras-chave:** gerência de rejeitos, rejeito radioativo, fontes radioativas, banco de dados.

*The Waste Management Department of IPEN (Nuclear Research Institute, São Paulo, Brazil) maintains at its interim storage 7481 radioactive sealed sources, coming from industrial, research and medical applications. The Department receives approximately 400 sources per year and the information of each one is properly stored in a*

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database created with Microsoft Excel 97. Before the use of this system, all data relative to the sources were typed directly in a simple table with more than 25 columns. This process was difficult, time-consuming and the activity of the sources must have been corrected every time that a report was requested. To (improve the management of these data) make easy this work, a form and a new database were created, using the resources of Microsoft Excel offers. Useful tools such as dropdown lists, macros, formulas and functions to convert units and update the activity were applied to help the user. After the

filling in the fields, the user has only to press a button to feed automatically the database. In addition to the save of time, other advantage is the possibility of introducing new fields and improving the system by the own user, since the use of macros eliminates the necessity of programming knowledge. The objective of this work is to present the created form as well the procedure adopted in its elaboration.

**Keywords:** waste management, radioactive waste, sealed source, database.

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## LICENCIAMIENTO Y CONTROL DE LAS INSTALACIONES RADIATIVAS EN ESPAÑA

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El artículo trata de presentar como se implantó el uso de las aplicaciones pacíficas de la energía nuclear, como fue el desarrollo de su marco legal hasta la actualidad debido a la incorporación de España a la Comunidad Europea y el establecimiento del Estado de las Autonomías.

Se definen las instalaciones radiactivas, presentando una clasificación de las mismas en tres categorías, tipos de autorizaciones y aquellas que se encuentran exentas del régimen de autorizaciones. Se definen las instalaciones radiactivas médicas en función de su campo, las industriales, las de investigación y docencia y finalmente las comerciales. Se muestra esquemáticamente los procesos de autorización y notificación de Puesta en Marcha. Finalmente se presentan los procedimientos de control por parte del organismo regulador durante su funcionamiento y cómo dicho organismo realiza el control a través de entidades de servicios.

A modo de conclusión se analiza el alto grado de eficacia con que se realiza el seguimiento en el

funcionamiento de las instalaciones radiactivas en España por parte del Consejo de Seguridad Nuclear.

*This paper shows how pacific use of nuclear energy was started in Spain, how its legal frame has been made to evolve due to the membership of Spain to the European Union and to the development of Spain Autonomous Regions.*

*Radioactive Facilities are described, splitting them by potential sources three main categories, by type of license and those with no need license. Radioactive facilities are divided and defined by its activity field in :Medical, Industrial, Research and Docent (Academic) and Commercial. A brief schema of the licensing process and the Start on Permit is presented here. Finally, direct or indirect (Services firms) Regulatory Body control procedures made during normal operation of the facilities are presented.*

*As conclusion the high degree of effectiveness in the continuous control radioactive facilities reached by the Nuclear Safety Council, is analysed.*

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