Strategic Planning For Human Resource Management at the Chilean Commission for Nuclear Energy

Planning and Management Office and Personnel Section

Items

- The organization
- Human resources: Historical situation and projections
- Interim actions
- Conclusions and Future Step
The organization

Organization Chart

[Diagram of organizational structure]

Ministro de
Nuclear

SUBSECRETARIA
COORDINADOR
COHEN
Centro Directivo
Director
Director

Jurídica
Difusión y Exterior
Auditoría

Planificación y Control de Gestión

Cooperación Técnica y Relaciones Internacionales
Gestión de Calidad

Departamento Seguridad Nuclear y Radiológica
Departamento Protección Radiológica Ambiental
Departamento Sistemas y Administración
Departamento Producción y Servicios
Departamento Aplicaciones Nucleares
Departamento Investigaciones Nucleares
Departamento Patente y Terminología
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CCNE

- Direction and Administrative Offices
- 2 Nuclear Centres
- 292 employees*
- US$ 9 millions/year

MISSION
Research, development and applications of pacific uses of nuclear energy.
Regulation, control and inspection of radioactive facilities.
Technology transfer

Objective
To contribute to country economical development, and the people social welfare and safety, and to environment preservation

CHILEAN COMMISSION FOR NUCLEAR ENERGY
CCNE. Contribution to the Community

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**RADIOISOTOPES**
RADIOPHARMACEUTICALS
LICENSENG
WASTE MANAGEMENT

**IRRADIATION**

**FERTILIZERS TRACERS**
NUCLEAR INSTRUMENTS (HUMIDITY)

**TRACERS**
CHEMICAL ANALYSIS AND FX
NUETRONIC ACTIVATION ANAL.
ENVIRONMENTAL ISO TOPES
REFERENCE MATERIALS
BIOMONITORS
ENVIRONMENTAL SAMPLES RANK

**ENVIRONMENTAL ISOTOPES TRACERS**

**HUMAN HEALTH**

**FOODS INDUSTRY**

**HEALTH SUPPORT**

**AGRICULTURE**

**ENVIRONMENTAL**

**HIDROLOGY**
### CHILEAN COMMISSION FOR NUCLEAR ENERGY

**CCNE. Products for different sectors.**

<table>
<thead>
<tr>
<th>MISSION</th>
<th>MINING</th>
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</thead>
<tbody>
<tr>
<td>Research, development and applications of pacific uses of nuclear energy. Regulation, control and inspection of radioactive facilities. Technology transfer to external sectors.</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Objective</th>
<th>MANUFACTURER INDUSTRY</th>
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</thead>
<tbody>
<tr>
<td>To contribute to country economical development, and the people social welfare and safety, and to environment preservation</td>
<td></td>
</tr>
</tbody>
</table>

### Products for different sectors:

- WASTE MANAGEMENT TRACERS
- DEVELOPMENT OF NUCLEAR INSTRUMENTS
- IRRADIATION
- RADIOISOTOPES
- RADIOPHARMACEUTICALS
- WASTE MANAGEMENT
- LICENSING
- WASTE MANAGEMENT
- TRACERS
- PUBLIC INFORMATION
- MINING
- MANUFACTURER INDUSTRY
- RESEARCH INSTITUTIONS
- CIVIL WORKS COMPANIES
- SANITARY SERVICE ORGANIZATIONS
- EDUCATION

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### Human resources: Historical situation and projections

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• Retirements
• No replacement of retired personnel by gradual diminution of the fiscal contribution.

Historical variation of CCNE’s personnel
(up to July of each year)
### Age average of the employees in relation to main functions (July, 2005)

<table>
<thead>
<tr>
<th>Category</th>
<th>Nº</th>
<th>Women</th>
<th>Men</th>
<th>Age average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority of Government and Directors</td>
<td>8</td>
<td>2</td>
<td>6</td>
<td>54.3</td>
</tr>
<tr>
<td>Professionals</td>
<td>148</td>
<td>43</td>
<td>105</td>
<td>49.4</td>
</tr>
<tr>
<td>Technicians</td>
<td>68</td>
<td>9</td>
<td>59</td>
<td>45.5</td>
</tr>
<tr>
<td>Administrative</td>
<td>59</td>
<td>32</td>
<td>27</td>
<td>45.7</td>
</tr>
<tr>
<td>Support</td>
<td>9</td>
<td>1</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>Age average</td>
<td></td>
<td>46</td>
<td>48.7</td>
<td>47.4</td>
</tr>
</tbody>
</table>

### Historical age average

(up to July of each year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Age average</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>43.3</td>
</tr>
<tr>
<td>1997</td>
<td>43.5</td>
</tr>
<tr>
<td>1998</td>
<td>43.5</td>
</tr>
<tr>
<td>1999</td>
<td>43.5</td>
</tr>
<tr>
<td>2000</td>
<td>44.0</td>
</tr>
<tr>
<td>2001</td>
<td>44.8</td>
</tr>
<tr>
<td>2002</td>
<td>46.1</td>
</tr>
<tr>
<td>2003</td>
<td>46.4</td>
</tr>
<tr>
<td>2004</td>
<td>48.1</td>
</tr>
<tr>
<td>2005</td>
<td>47.4</td>
</tr>
</tbody>
</table>
Historical retirements
(up to July of each year)

Year

Employees retired


[Bar chart showing historical retirements up to July of each year]
Causes of gradual aging

- The existence of resources and special bonds
  - economic resources
  - specialised equipment
  - possibility of establishing internal and external bonds
    - to carry out joint investigations
    - to participate in co-ordinated projects
    - contracts of investigation, financed by foreign organisms
- The nuclear specialisation.
  - Specially associated to areas of Nuclear Safety, Radioprotection, Fuel Cycle
- State protectionism.
  - Public Sector employees have less mobility than those of the private Sector.
  - Labour stability at critical times.

### Historical permanence and projection of employees retirement

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Historical permanence</th>
<th>Potential retirements (year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N°</td>
<td>Nº Employees whose permanence ≥ 25 years</td>
<td>Average years per category</td>
</tr>
<tr>
<td>Authority of Government and Directors</td>
<td>8</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Professionals</td>
<td>148</td>
<td>63</td>
<td>19</td>
</tr>
<tr>
<td>Technicians</td>
<td>68</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Administrative</td>
<td>59</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Support</td>
<td>9</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>292</td>
<td>101</td>
<td>18</td>
</tr>
</tbody>
</table>
Professionals: Projected retirements
(2010 and 2015)

Professionals and Technicians:
Projected retirements to 2015, by area

<table>
<thead>
<tr>
<th>Departments</th>
<th>Year 2010</th>
<th>Year 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>Production and Services</td>
<td>29%</td>
<td>29%</td>
</tr>
<tr>
<td>Systems and Administration</td>
<td>28%</td>
<td>28%</td>
</tr>
<tr>
<td>Consulting Units</td>
<td>47%</td>
<td>47%</td>
</tr>
<tr>
<td>Nuclear Materials</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Nuclear Applications</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>Radiological and Environment Protection</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Nuclear and Radiological Safety</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Directives</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

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Interim Actions

Basic Institutional Values

- Human Resource is the main capital of the Institution
- Knowledge maintenance and preservation is an institutional responsibility
  - Knowledge and acquired data are important
- Knowledge management for global challenges learning is necessary:
  - Information technologies
  - accelerated innovations
  - knowledge exchange control
- Knowledge and basic competitions must be clearly defined for employees to be recruited.
- Basic competitions reinforcement must be done through continuous re-learning/education.
- Knowledge and technological advances must be applied to obtain new production and application processes.
Starting Strategies

• **Public Sector Management Improvement Program (PMG’s)** Implemented in CCNE since 2002 in order to define areas of weakness and/or areas of improvement.
  – **Analysis of the Institutional Risk Matrix.**
    • Building awareness stage
    • Strategic road map for risk severity prevention
      – To areas and processes that concentrate the greatest technical and/or administrative risks.
      – To processes with less controls, associated to inherent risks, and processes with high levels of risk exposure.

• Implementation of a Quality Management System
  – Certification of strategic institutional products and services.
    – Implementation of procedures and work instructions
    – Effective endorsement of procedures and traceability
    – Implementation of an effective organizational structure

• Annual group commitments through “work contract”.
• Performance incentives via fulfillment of goals
• Qualification Program
  – Qualification standards according to hierarchic levels
• Strategic Planning.
  – To be developed during 2005.
Conclusions

• The human resource has turned into an area of high risk. It is necessary to make urgent and planned actions to diminish this risk.

• To not consider the aging of the personnel will affect the CCNE’s capability to fulfill its mission.
  – For tomorrow’s personnel retirement, it is necessary today to identify those critical scientific, technical and management abilities required to continue the institutional mission.

Future Step: Strategic Planning For Human Resource Management

• To establish the competence profile of the “national expert” in the nuclear and radiological sector

• To implement human resource management practices, integrated to planning, programming, allocation of budget, and evaluation.

• To implement policies for personnel recruitment, maintenance and retirement, in order to maintain the institutional capabilities.

• To implement a system of nuclear knowledge management to facilitate the identification, harvesting, preservation, and transference of the knowledge in order to satisfy the institutional needs.

• To implement incentives associated to the fulfillment of CCNE’s goals, objectives and mission.
Thank you for your attention
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ORGANIZATION CHART

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