



# *HACCP and ISO systems at Reykjavik Energy*

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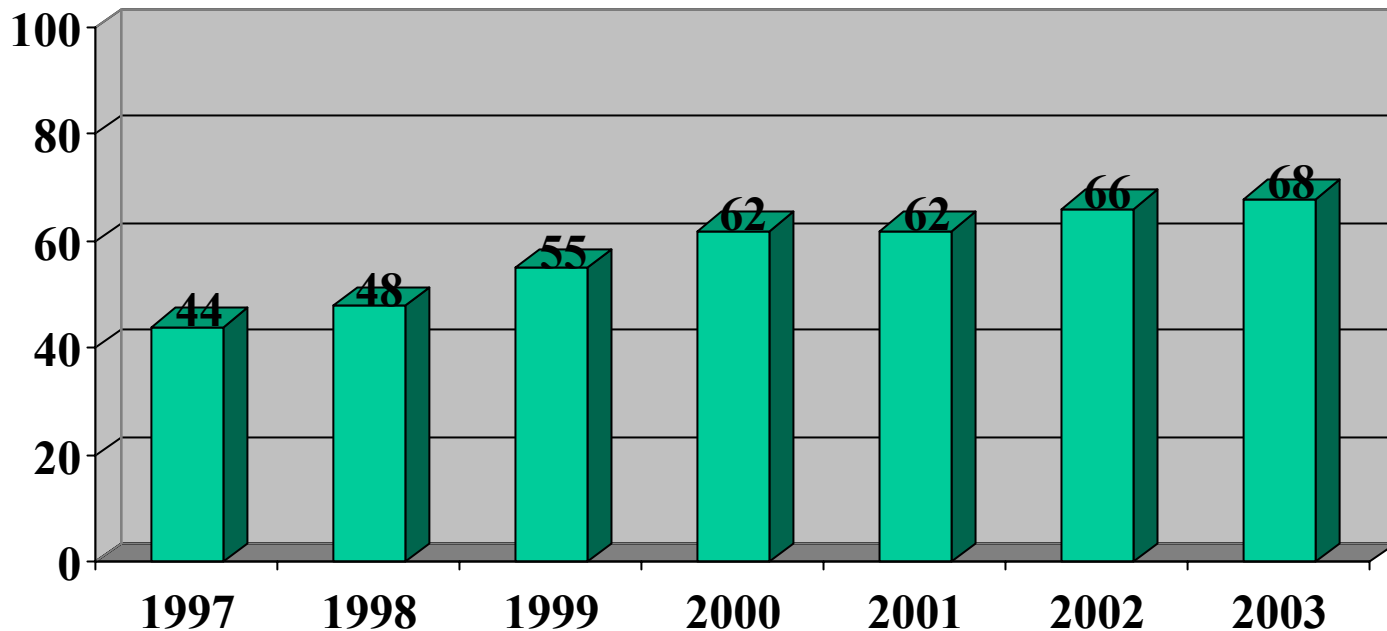


# *Iceland*

- An island in north Atlantic ocean
- One of the Nordic countries
- Population approx. 300.000 people
- Capital city: Reykjavik
- Education and technology levels: High
- Unemployment rate about 2 %
- Member of NATO, EFTA and belongs to EEA



# *Water safety plan in Iceland*



**■ Cumulative percentage of the Icelandic population with drinking water produced by HACCP-certified waterworks**



# *Reykjavik Energy (RE)*

- RE is the largest energy company in Iceland.
- It mainly produces, distributes and sells
  - cold tap water for consumption,
  - geothermal hot water for heating, and
  - electricity for the greater Reykjavik area.

Reykjavik Energy services the city and communities in south and west parts of Iceland.





# *Products involve*

- The **cold drinking** water is pumped from holes drilled into the ground to consumers, untreated and unsterilized.
- The **hot water** is pumped from the earth from underground wells and the water remains hot by geothermal heat.
- **Electricity** is generated to Reykjavik city and neighboring communities from two hydro power-stations, one methane power-station and one geothermal power-station at Nesjavellir.



# *Nesjavellir in summer and winter*

The Nesjavellir powerplant generates 90 MW of electricity and 250 MW of thermal energy.





# *Quality system*

- RE operates according to:
  - HACCP for cold water 1997
  - ISO 9001:2000 for cold water 1999
  - ISO 9001:2000 for electricity 2002
  - ISO 9001:2000 for hot water 2003
  - Balanced Scorecard methodology
  - Is currently working towards ISO 14001
  - Is currently working towards OHSAS 18001



# Operational manual

Rekstrarhandbók Orkuveitu Reykjavíkur - Microsoft Internet Explorer provided by Orkuveita Reykjavíkur

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Address http://arnes/handbok/

## Rekstrarhandbók

Orkuveita Reykjavíkur · Bæjarhálsi 1 · 110 Reykjavík  
Sími 516 6000 · Fax 516 6709 · Kt. 551298-3029

Forsíða

- Stjórnunarhandbók
- Rb. Framleiðsla (A)
- Rb. Kerfisstjórnar (B)
- Rb. Dreifingar (C)
- Rb. Sölu (D)
- Rb. Framkvæmda (E)
- Rb. Fjármála (F)
- Rb. Skrifstofu forst. (G)
- Rb. Tæknimála (H)
- Rb. NH (I)
- Rb. Starfsmannahalds (J)
- Rýni
- Umsjón
- Innri úttektir

Nýtt skjal

### Stjórnunarhandbók - Skipulagsskjöl (SKI)

Skjal	Heiti	Dags.	Útgáfunr.	Geymslubók
SKI-010	Skipurit Orkuveitu Reykjavíkur	09.09.2003	14	13
SKI-015	Skipulag og samverkan ferla	30.01.2004	07	06
<b>HACCP</b>				
SKI-035	GÁMES	19.11.2003	12	11
SKI-040	Tilvísanir skjala í innra eftirliti	14.01.2004	15	14
<b>ISO 9001</b>				
SKI-050	Skjalfesting gæðakerfis	08.03.2004	18	17
SKI-050	Skjalfesting rekstrarkerfis	08.03.2004	18	17
SKI-056	Gæðakerfi OR	03.11.2003	13	12
<b>INNRA EFTIRLIT HITAVEITU</b>				
SKI-070	Innra eftirlit hitaveitu	12.11.2002	04	03
SKI-075	Tilvísanir skjala í innra eftirliti hitaveitu	27.11.2003	06	05
<b>RAFMAGNSÖRYGGISSTJÓRNUNARKERFI</b>				
SKI-080	Innra öryggisstjórnunarkerfi rafmagns	07.11.2003	07	06
SKI-085	Ábyrgð stjórnenda	07.11.2003	04	03
SKI-090	Skilgreining kunnáttumanna	27.03.2003	05	04
<b>ISO 14001</b>				
SKI-100	Umhverfisstjórnunarkerfi	08.03.2004	12	11
SKI-110	Umsóknir um starfsleyfi	27.09.2002	01	0
<b>OHSAS 18001</b>				

Leita

Allar handbækur

- Númer skjals
- Nafn skjals
- Innihald skjals

Local intranet



# *Issues*

- Reasons for implementing various standards.
- How the various control systems have been implemented into one operational system.
- How the systems were immediately operative in the corporative function.



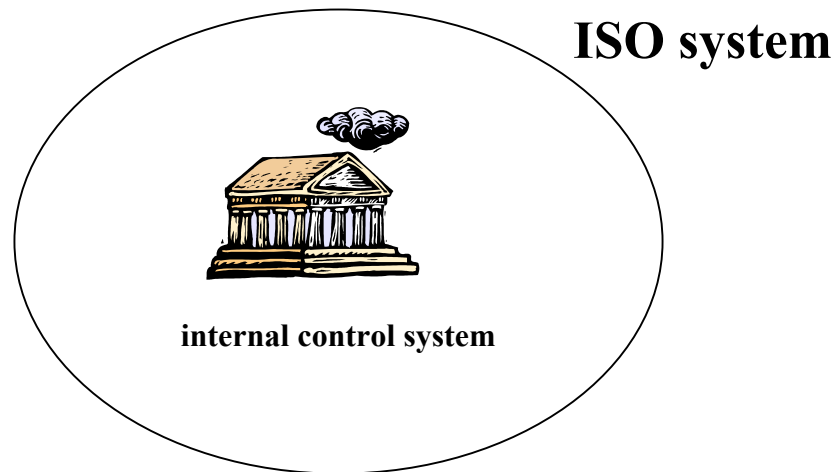
# *Reasons*

- Reykjavik Energy uses the quality system to focus on:
  - Customers
  - Strong infra-structure
  - Competition



# *Model for implementation*

- The model for implementation of ISO 9001 was to first build an internal control system for each medium. Then the missing ISO components were added around this core function.





## *RE'S HACCP SYSTEM*

1. Training of staff
2. Sanitation plan
3. Temperature control
4. Control of product/goods reception
5. Response to nonconformities
6. Clear responsibility
7. Product description
8. Flowchart
9. Defining of hazard factors
10. Registration
11. Documentation
12. Internal audits
13. Re-evaluation
14. Preventive action
15. Critical control points
16. Criteria limit
17. Planned control
18. Corrective action

## *ISO 9001 REQUIREMENTS*

4. Quality management system
  - 4.1 General requirements
  - 4.2 Documentation requirements
5. Management responsibility
  - 5.1 Management commitment
  - 5.2 Customer focus
  - 5.3 Quality policy
  - 5.4 Planning
  - 5.5 Responsibility, authority and communication
  - 5.6 Management review
6. Resource management
  - 6.1 Provision of resources
  - 6.2 Human resources
  - 6.3 Infrastructure
  - 6.4 Work environment
7. Product realization
  - 7.1 Planning of product realization
  - 7.2 Customer-related processes
  - 7.3 Design and development
  - 7.4 Purchasing
  - 7.5 Production and service provision
  - 7.6 Control of monitoring and measuring devices
8. Measurement, analysis and improvement
  - 8.1 General
  - 8.2 Monitoring and measurement
  - 8.3 Control of nonconforming product
  - 8.4 Analysis of data
  - 8.5 Improvement



# *Functional system from start*

- By translating existing work procedures into the terminology of the ISO standard, a quality system was built that was already fully functional.



## *Finally, but not least*

- When starting to implement a HACCP/ISO system, it is important to start with establishing a corrective action procedure.
- Then translate existing work procedures into the terminology of the ISO standard and build a quality system that is already fully functional.
- Finally we use use internal audits and management reviews to find missing items, record them and register in the the corrective action system.

*Follow that operational manual!*

