Procedure for Site Release

Group 2

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Site Release strategy

- National legislative requirements (release criteria)
- International Recommendations (IAEA, EU and others)
- Definition of end point for the site (Green or Brown field)-Assessment criteria:
  - Site composition,
  - Protection of underground water
  - Cost benefit analizes

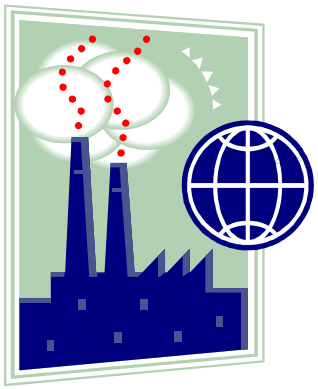
Site Characterization

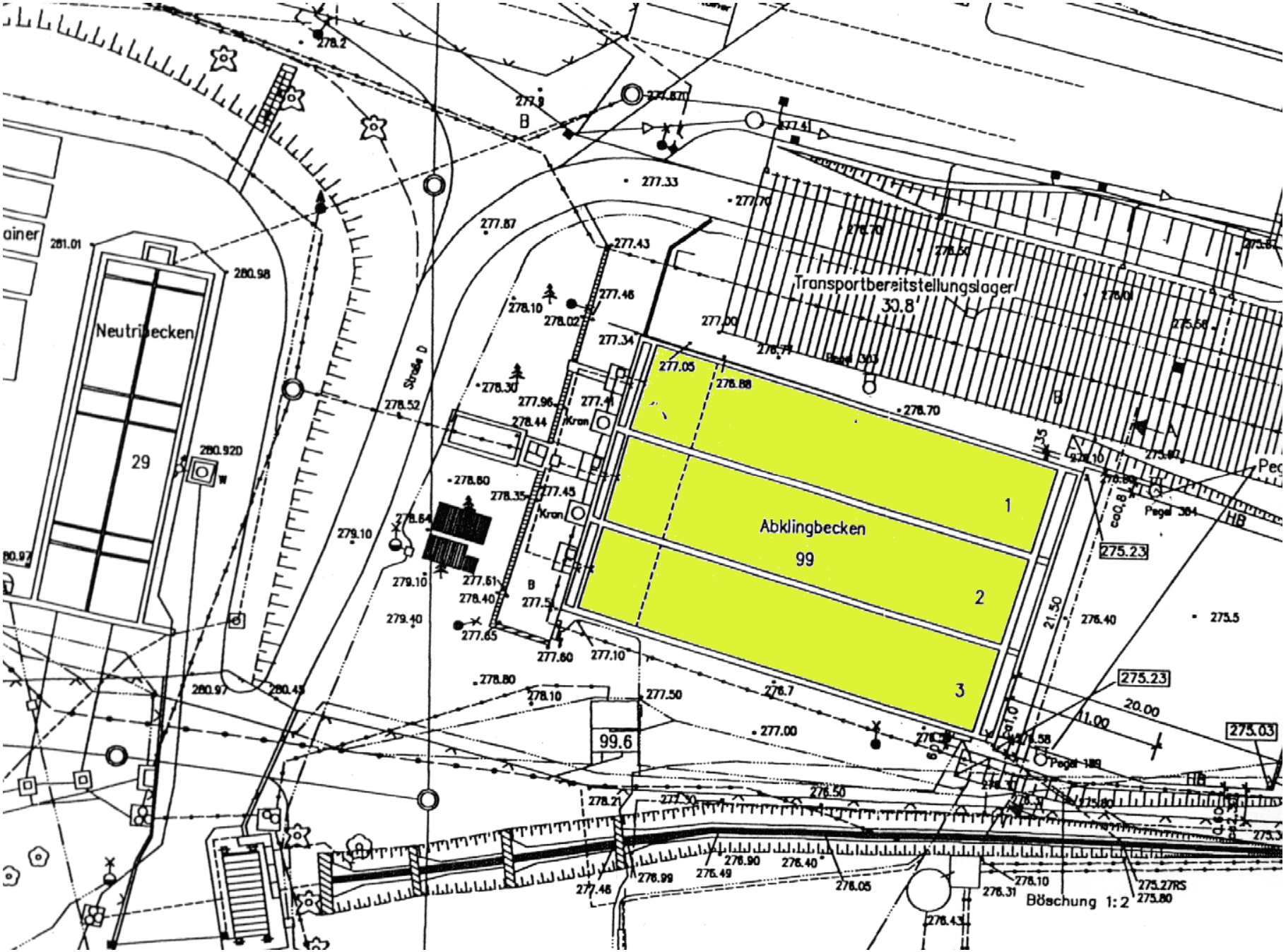
- General conditions of whole site (pond inside the nuclear installation);
- The history of use of the site;
- Location of the facility and its present situation,
- Description of waste water and other waste stream:

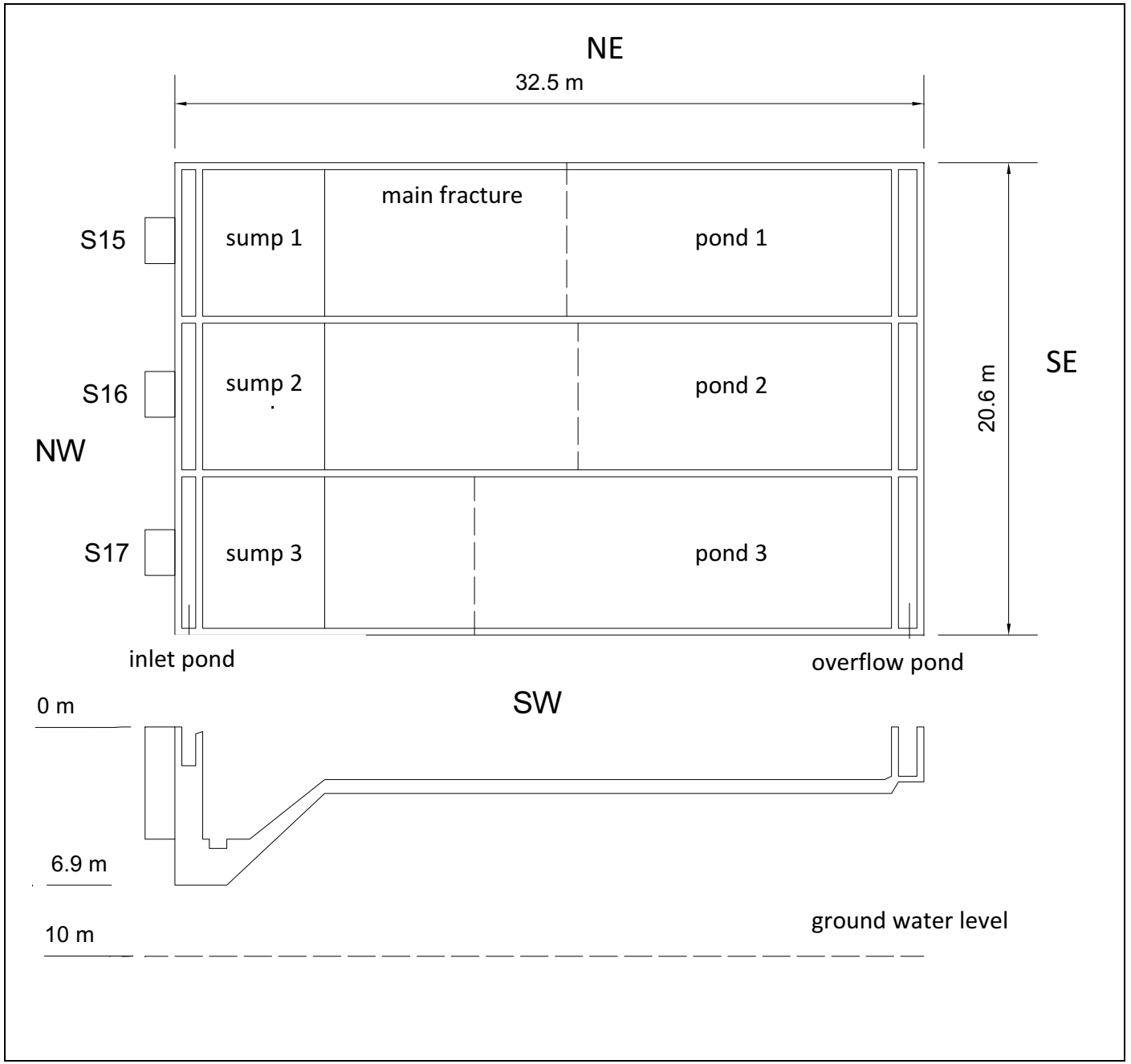
✓ Research reactor

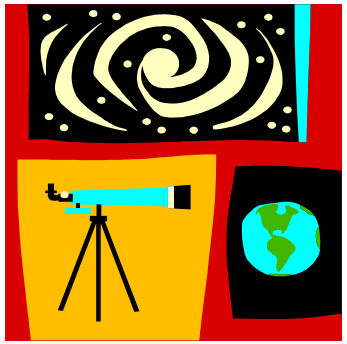
✓ Radiochemical laboratories

✓ Reprocessing of irradiated fuel elements




Neutralisationsbecken
29
Abklingbecken
99
1
2
3
Transportbereitstellungslager
30.8
99.6
Böschung 1:2
275.23
275.03
20.00
1.00
21.50
HB
Pegel 384
Pegel 189


NE
32.5 m
main fracture
S15
sump 1
pond 1
S16
sump 2
pond 2
NW
S17
sump 3
pond 3
20.6 m
SE
inlet pond
overflow pond
SW
0 m
6.9 m
10 m
ground water level



Survey Strategy

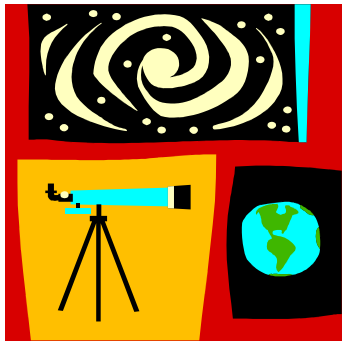
- Assessment of the scope of the survey (by core driling)
- Definition of measurement technique according to existing nuclide distribution and condition of the structures, depth of concrete.

✓ Taking the samples; for radiochemical analyze,

✓ In situ measurement;

✓ surface contamination measurement Nuclide vector for different materials and places (as were defined before)

- Report to RB



Equipment

- HpGe spectrometer
- Portable radiometers (Contamat FHT-111M, Radiogem 2000 and others)
- Portable and stat ional Scintillation spectrometers and detectors (Inspector 1000, Field spec, Eberline FH-40GX and others with teleprobe)
- Alpha spectrometer
- Multichannel analyzer
- Liquid scintillation counter

Survey

Develop initial survey plan to be approved by RB:

- Concrete structure survey, 1x1 m^2, average Soil Survey (around and below the structure) – drilling on bottom, about 20 core samples
- Survey of all other auxiliary systems (pipes, shafts, paved areas other structures)
- Assessment of visual damages on the structure (possible additional core samples)
- Assessment of ground water for possible contamination and its spreading
- Conduct the survey
- Compliance with release criteria

Decontamination

- Assessment of survey results
- Elaboration of Clean up Plan to be approved by RB (if it is needed)
- Definition of decontamination tools:

✓ Working areas establishment,

✓ Dry cleaning;

✓ Management of the secondary waste (treatment of concrete and others),

✓ Management of contaminated soil,

✓ Material clearance assessment

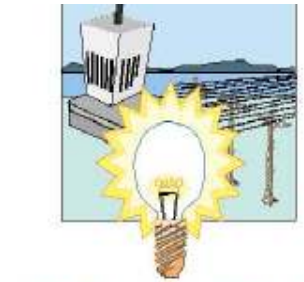
- Decontamination on elevated places of the facility
- Decontamination control

Cost

- Release alternatives
- Site remediation
- Measurement equipment,
- Decontamination equipment,
- Dismantling equipment,
- Labour cost
- Management of radioactive waste
- Logistic
- Auxiliary systems
- Expertise
- Other cost
- Regulatory approval

Radiation Protection

- Estabishment of radiation protection programme approved by RB:
- ✓ ALARA principle,
- ✓ Working rules;
- ✓ Workplace monitoring,
- ✓ Individual dose monitoring,
- ✓ Definition of PPE
- ✓ Arrangement of decontamination for workers
- ✓ Definition of zones
- ✓ Security control
- ✓ Development QA programme and QC procedure
- ✓ Development of Emergency responce plan
- Environment monitoring
- ✓ Dose assessment
- ✓ Sampling and others



ALARA

End point

- Final report approved by RB:
- The conditions for restricted use:

✓ To demolish or use (for example storage place or other)

- Definition of the restrictions

✓ Time schedule,

✓ Access control,

✓ Environmental monitoring programme (if other nuclear installation does not exist)