Státní úřad pro jadernou bezpečnost

System for assessment and prognosis during a nuclear emergency in the Czech Republic

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Introduction

- NPP Dukovany — VVER-440 — 4 units
  in operation — 1985
- NPP Temelín — VVER-1000 — 2 units
  in operation — 2000
- Emergency planning zones (EPZ) defined on the base of scenarios of severe accidents

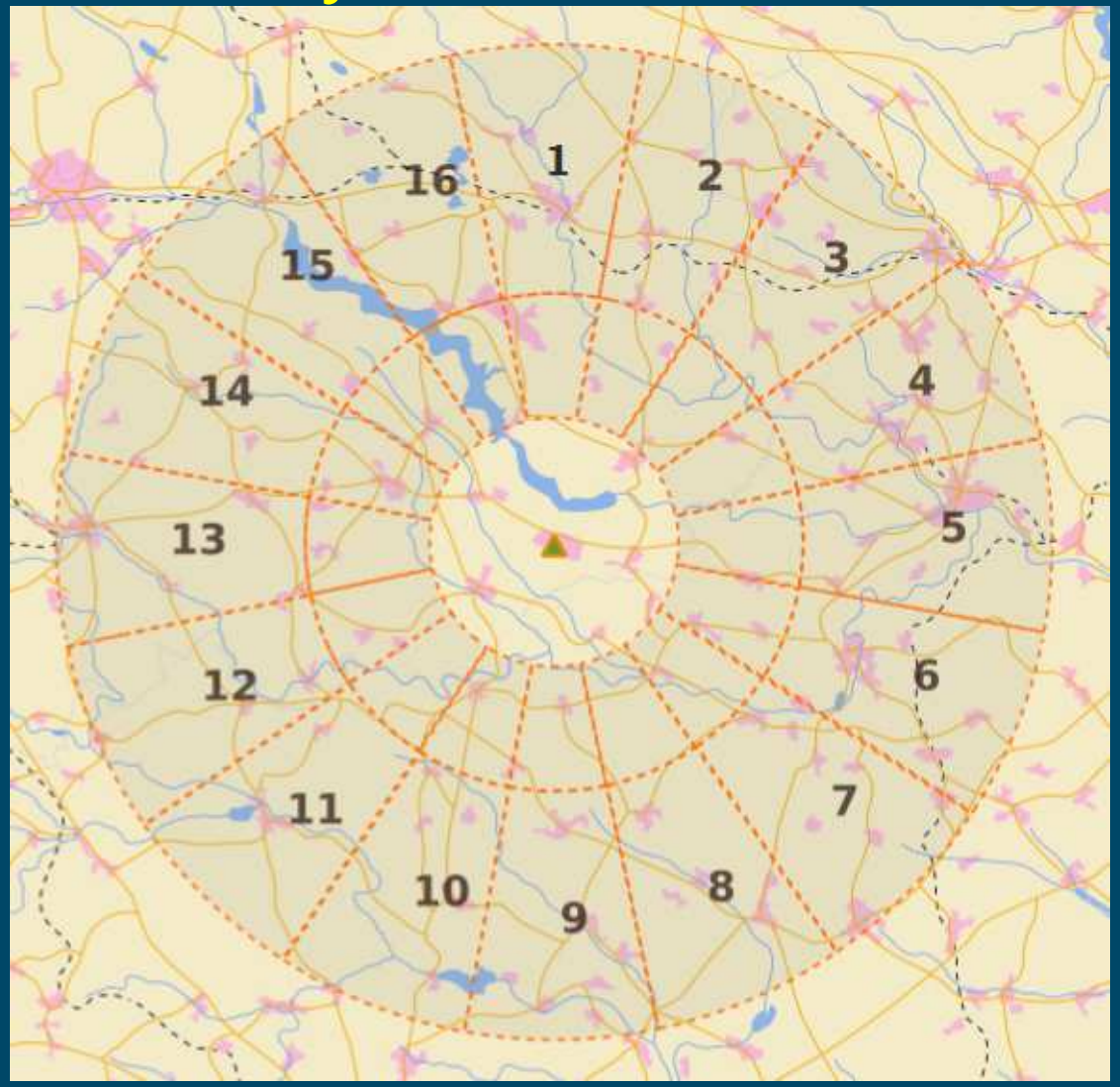
NPP Dukovany – EPZ

10 km inner

20 km outer

16 sectors

3 km safety area
(without residents)



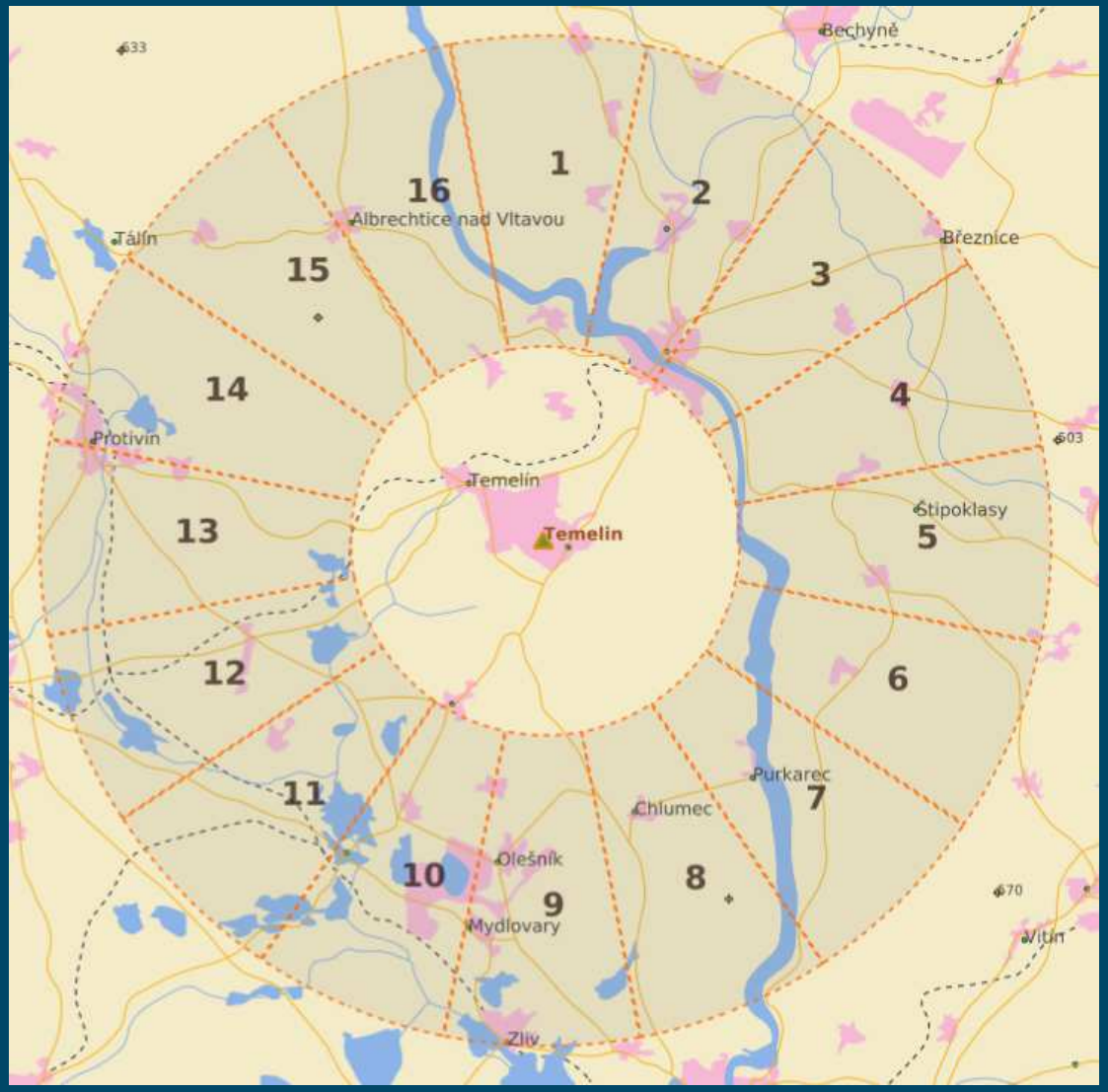
NPP Temelín – EPZ

5 km inner

13 km outer

16 sectors

2 km safety area
(without residents)



Protective measures in EPZ

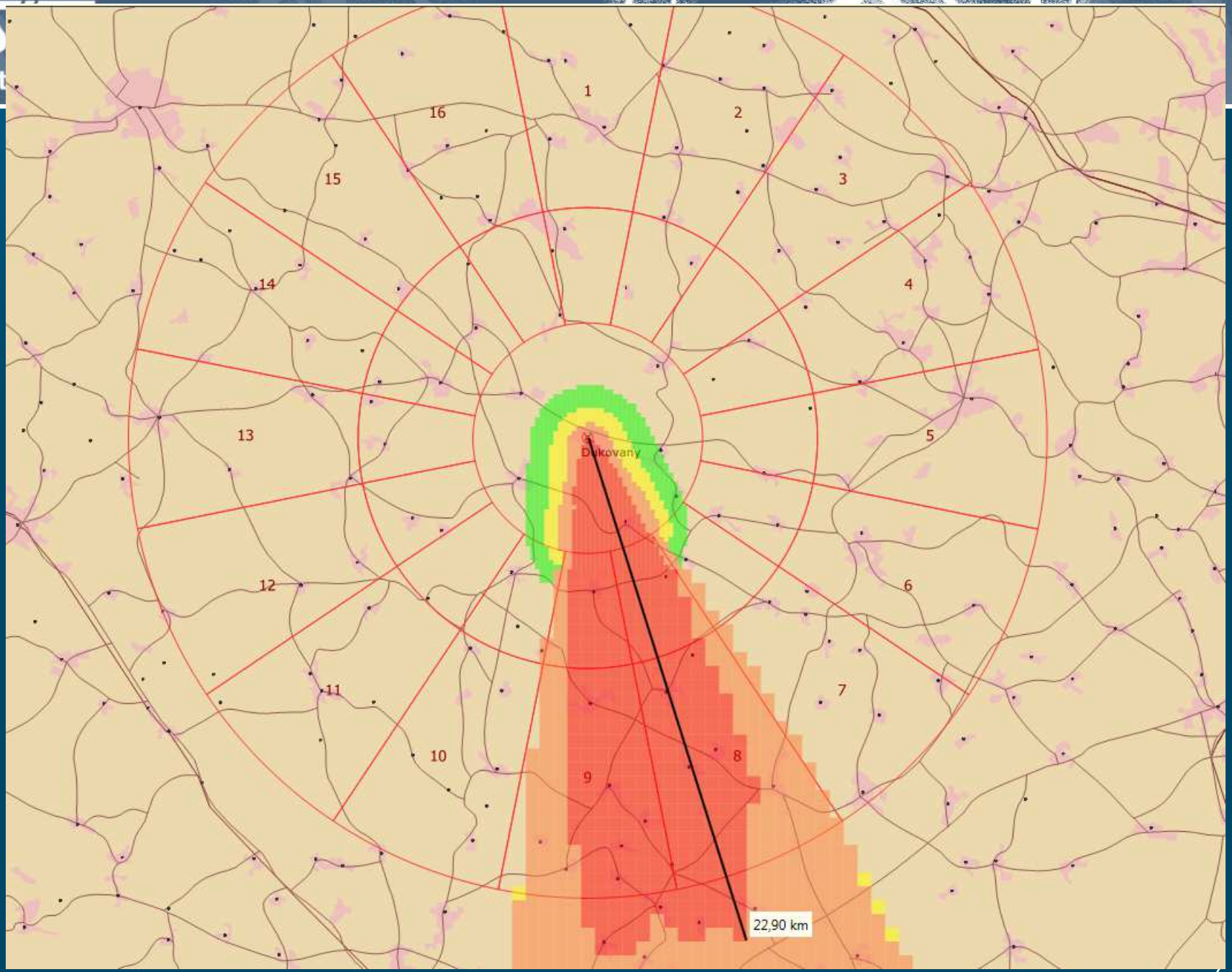
Urgent protective measures prepared:

- Sheltering + stable iodine prophylaxis (pills)
  implemented automatically in the whole EPZ after a signal of sirens – responsibility of the NPP operator
- Evacuation
  not supposed in the very early phase of an emergency
  - not enough time
  - uncertainty of weather conditions prediction

Protective measures in EPZ

Evacuation after sheltering

- prepared for people:
  - in the whole inner part of EPZ
  - in potentially affected sectors of the outer part of EPZ
- performed on the base of radiation survey in really affected area
  (dose rate and contamination monitoring)
- could be
  - reduced in the inner part of EPZ
  - extended beyond the EPZ if necessary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16
Dukovany
22,90 km

Assessment and prognosis during emergency

- SÚJB Emergency Centrum
- ESTE EDU (ESTE ETE) code, ESTE ANALYST code
- on-line NPP technological data
  → source term prognosis
  + actual information on the meteorological situation
  → prognosis of an impact to environment
  → assessment of the necessity of the evacuation
- final decision after receiving the measurement results (NPP teledosimetric system, early warning system, mobile monitoring groups, aerial monitoring)

Possible severe accident impact

The role of optimization

- in the emergency preparedness
- in a decision making process of the urgent protective measures

Defining distances for implementing individual urgent protective measures

- on the base of credible and highly realistic models for radionuclide dispersion
- with reasonable grade of conservatism
- using the IAEA criteria

Possible severe accident impact

It is highly necessary

- to provide public with understandable, credible and consistent information about emergency preparedness processes
- to very well justify and optimize any potential changes in current systems

Thank you for your attention