

Modelling of dismantling of the Shelter's metal frame with personnel doses calculation at all stages of the work execution



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Transformation of the Shelter object into an ecologically safe system

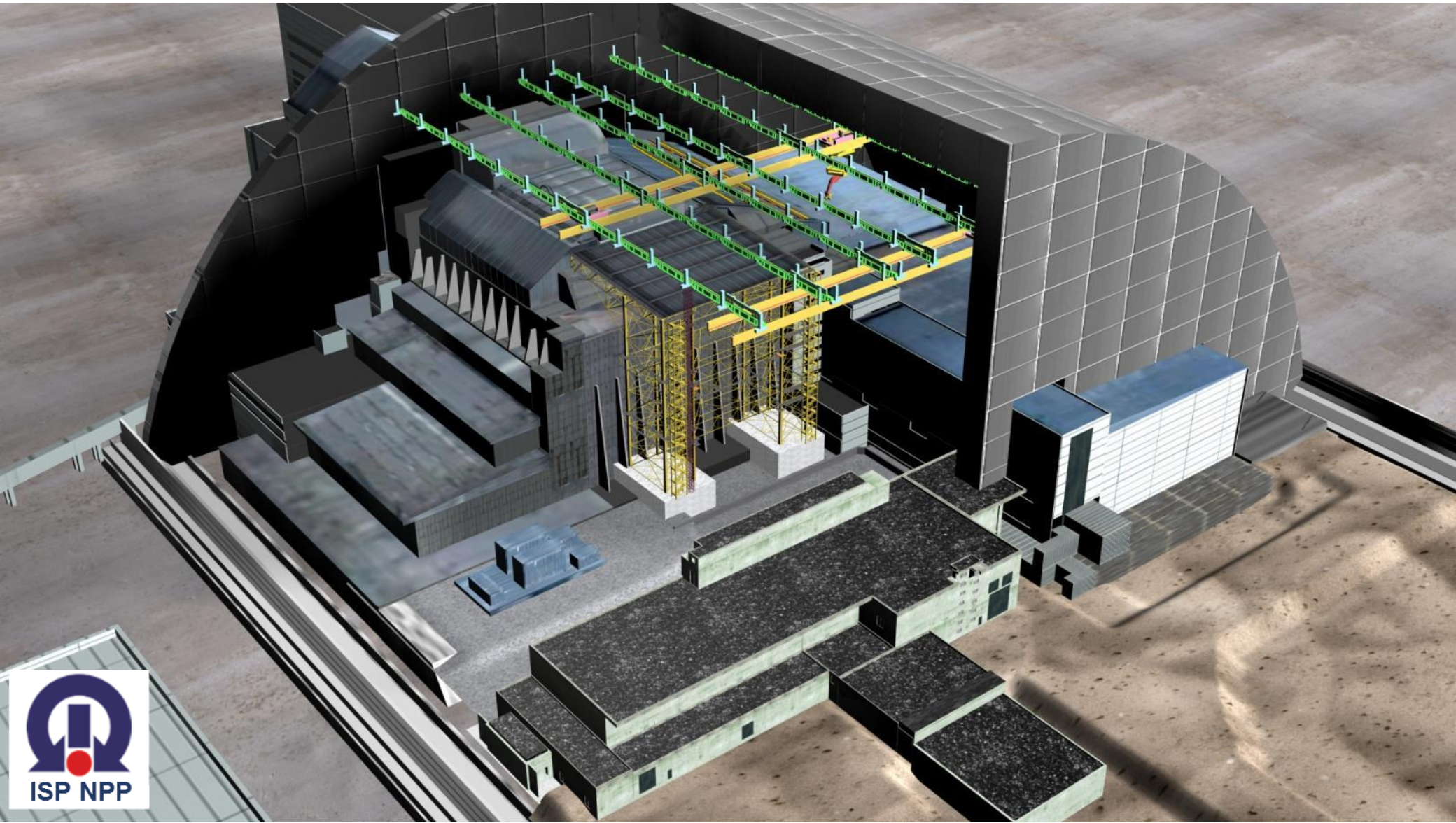


View of the Shelter object
before construction of NSC

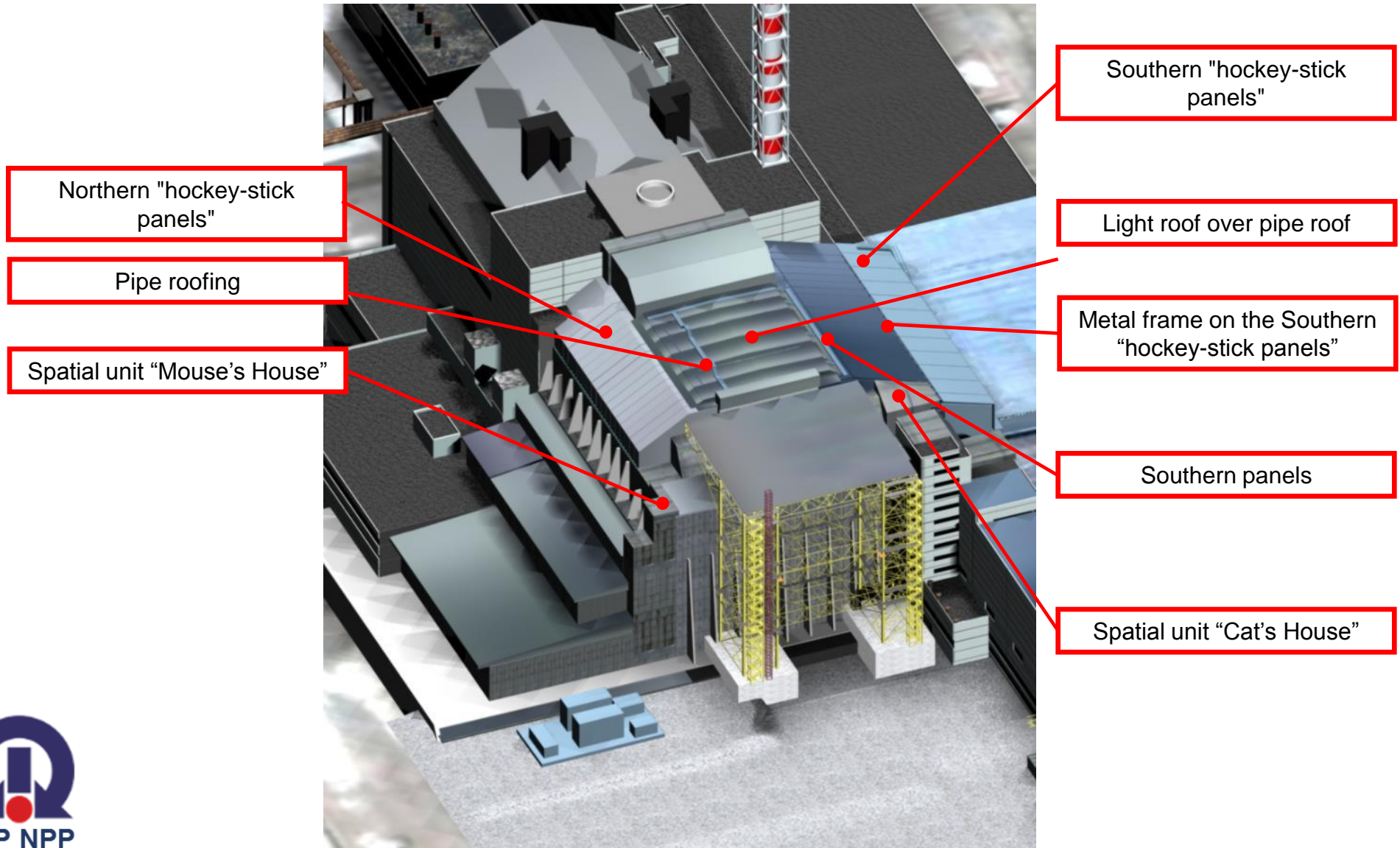


Current view of SO –
New Safe Confinement

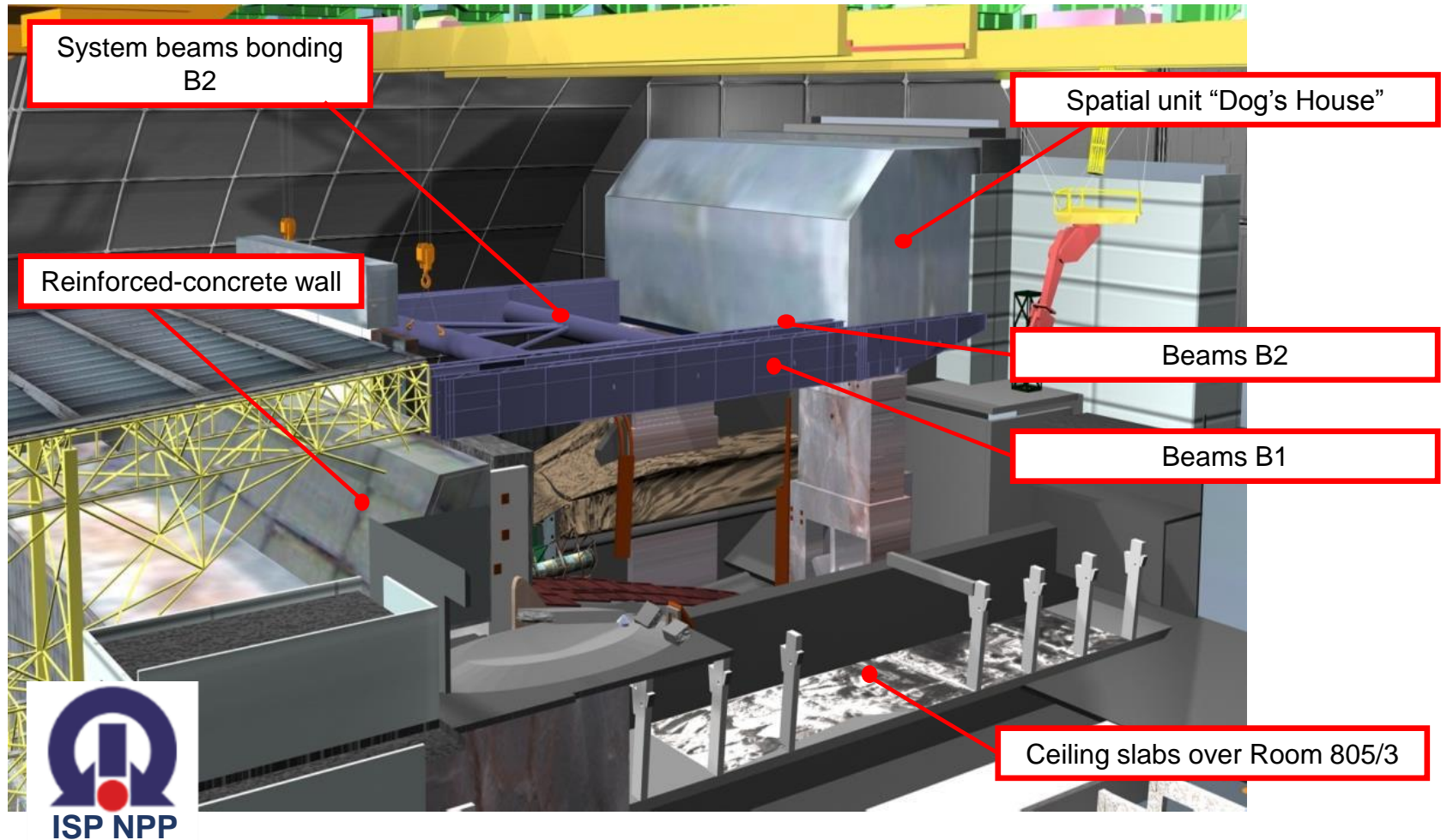
The three-dimensional model of the “Shelter” object that is covered by New Safe Confinement (north-west view)



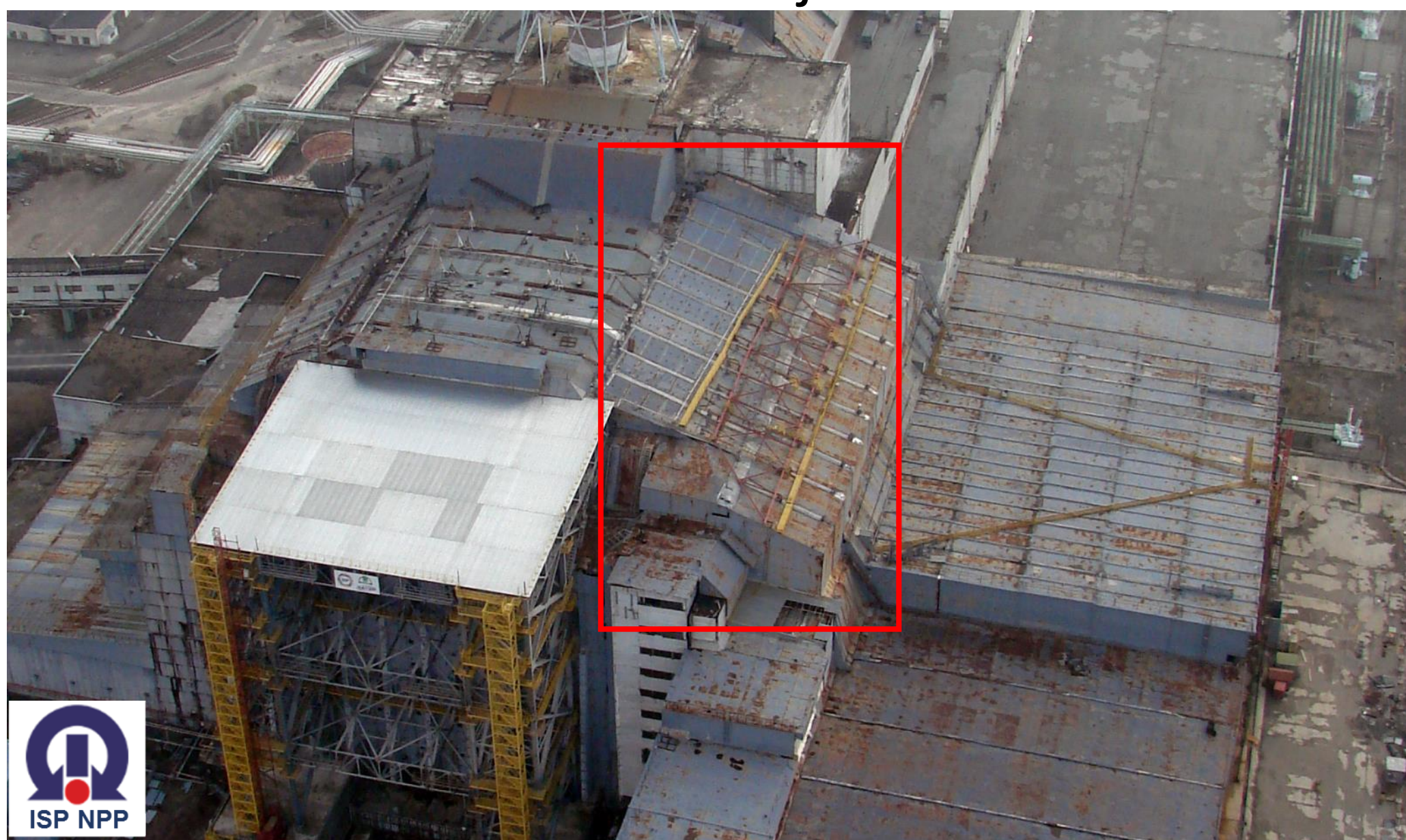
Constructions of the Shelter object that will be dismantled after putting NSC into operation (“early” dismantling)



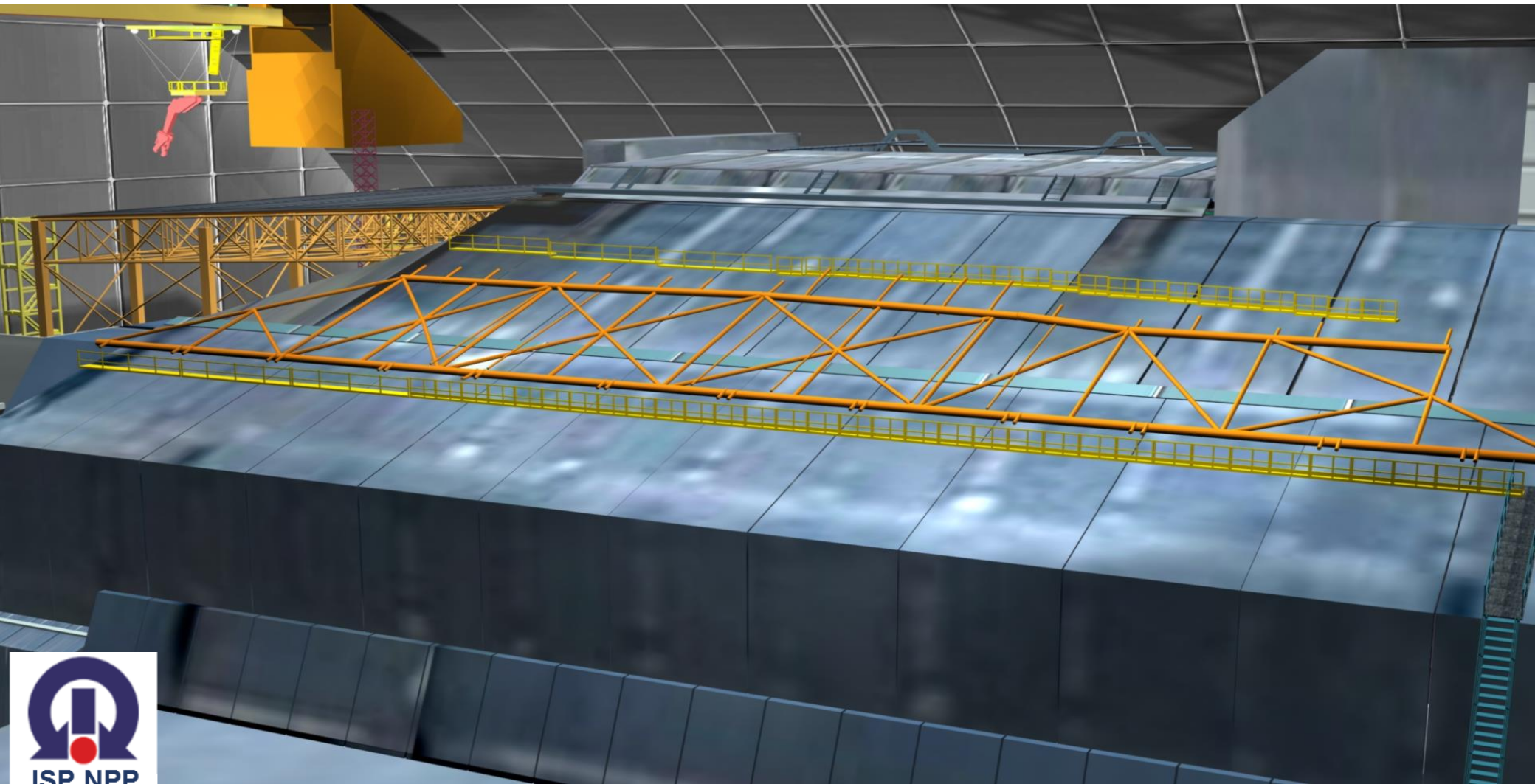
List of works on "delayed" dismantling of the Shelter object designs



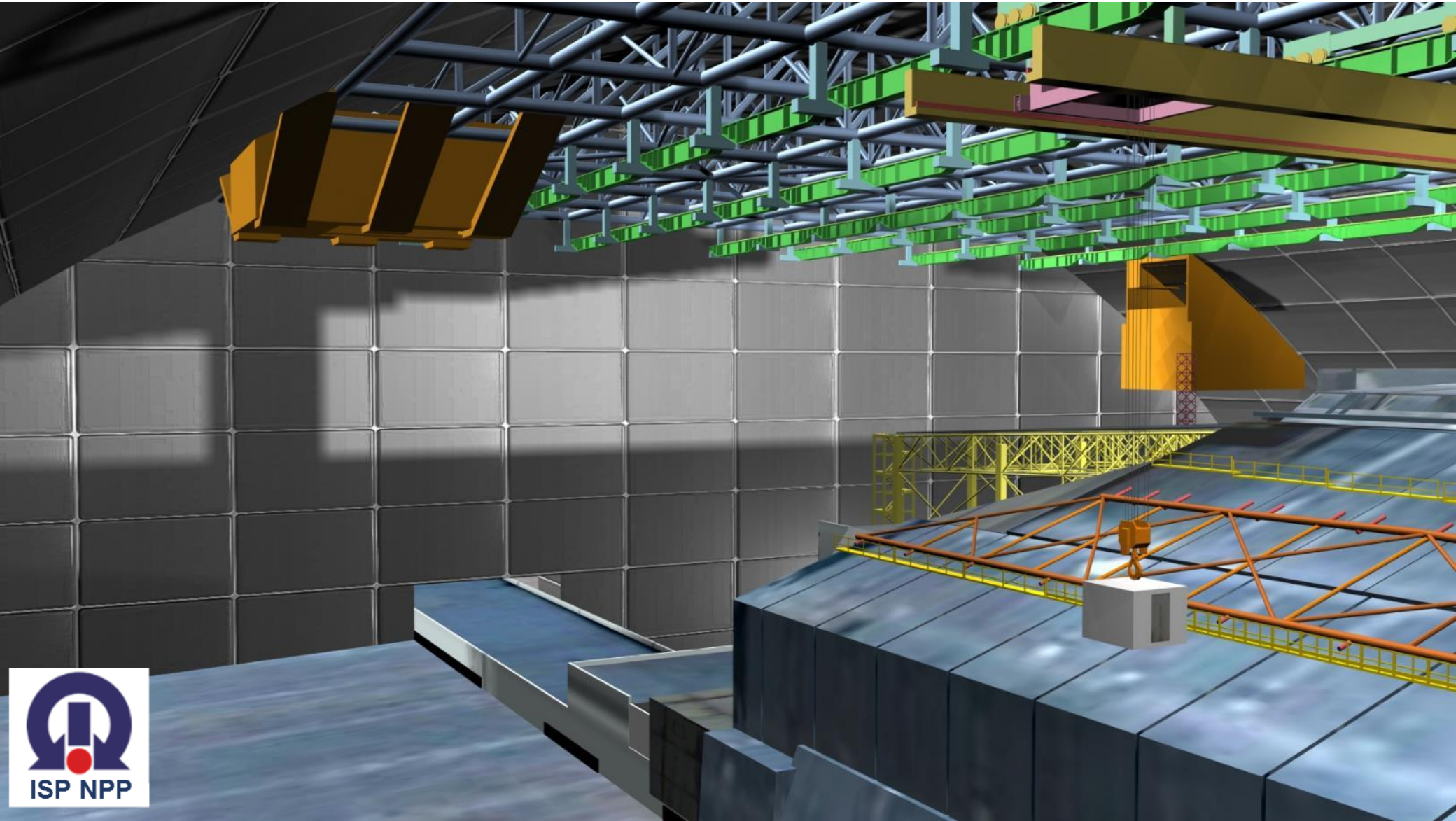
Position of metal the frame on the roof of the Shelter object



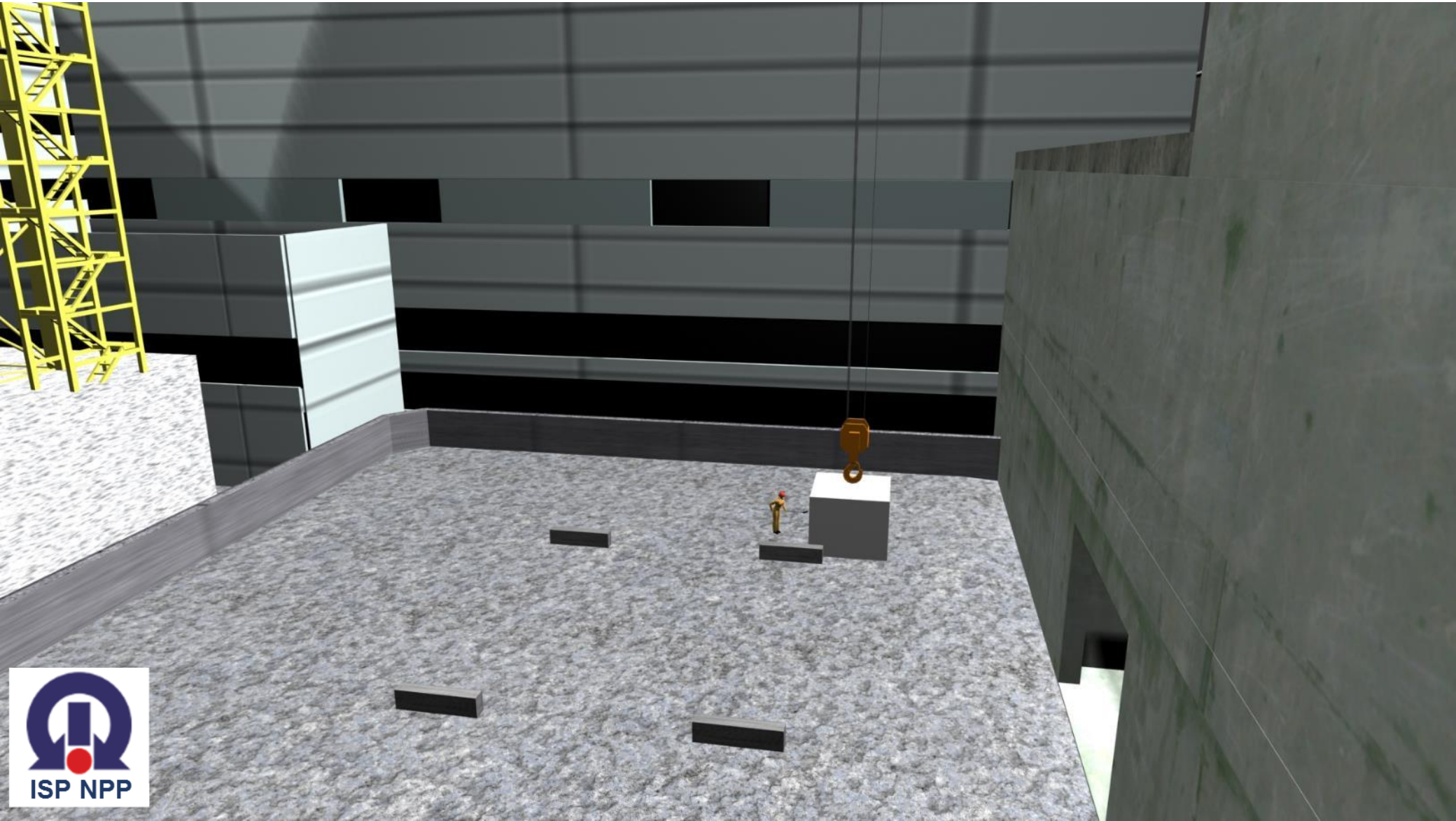
The view of the metal frame before the dismantling activity



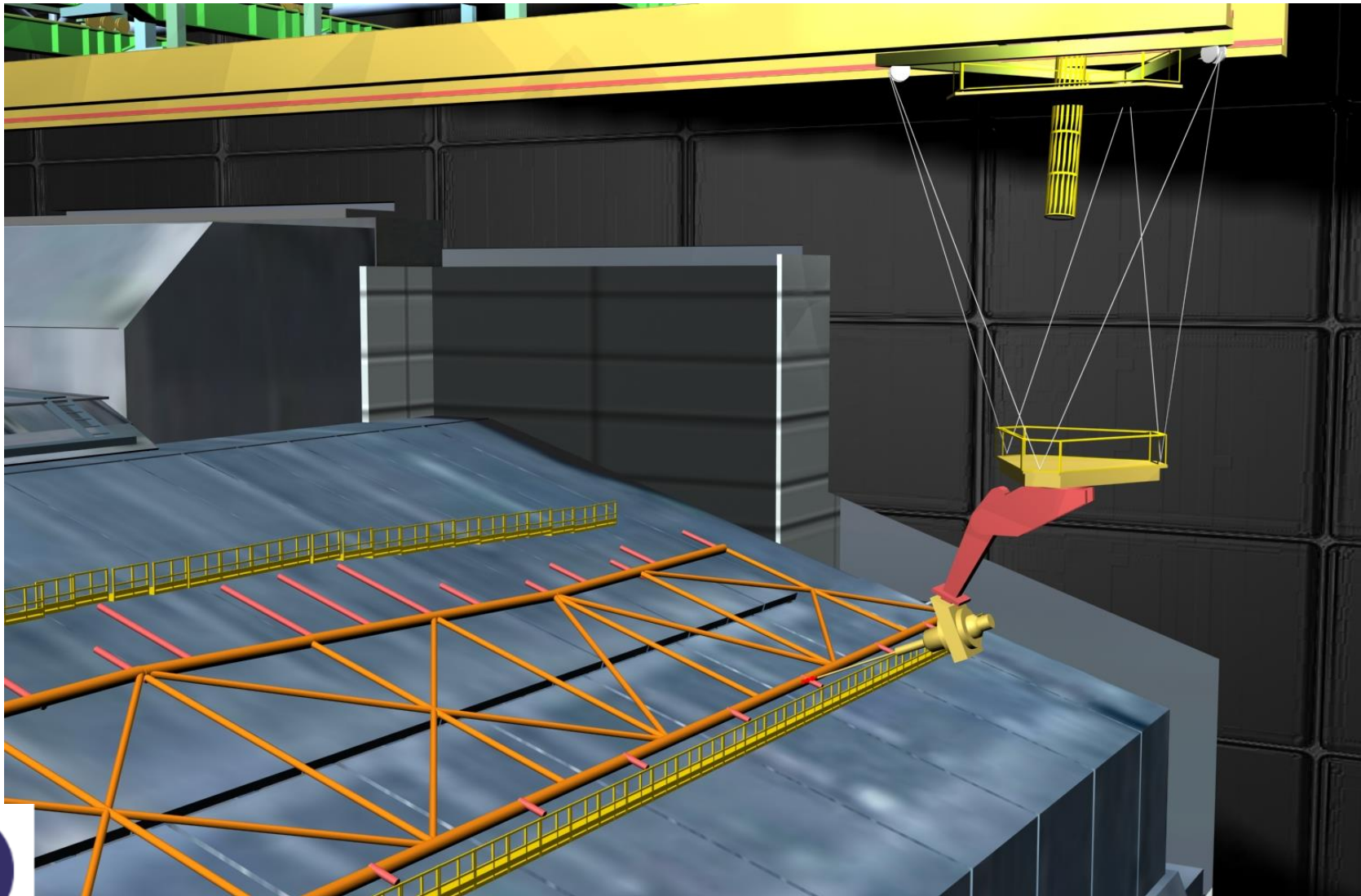
Use of a protective box for the transport of personnel to the work area



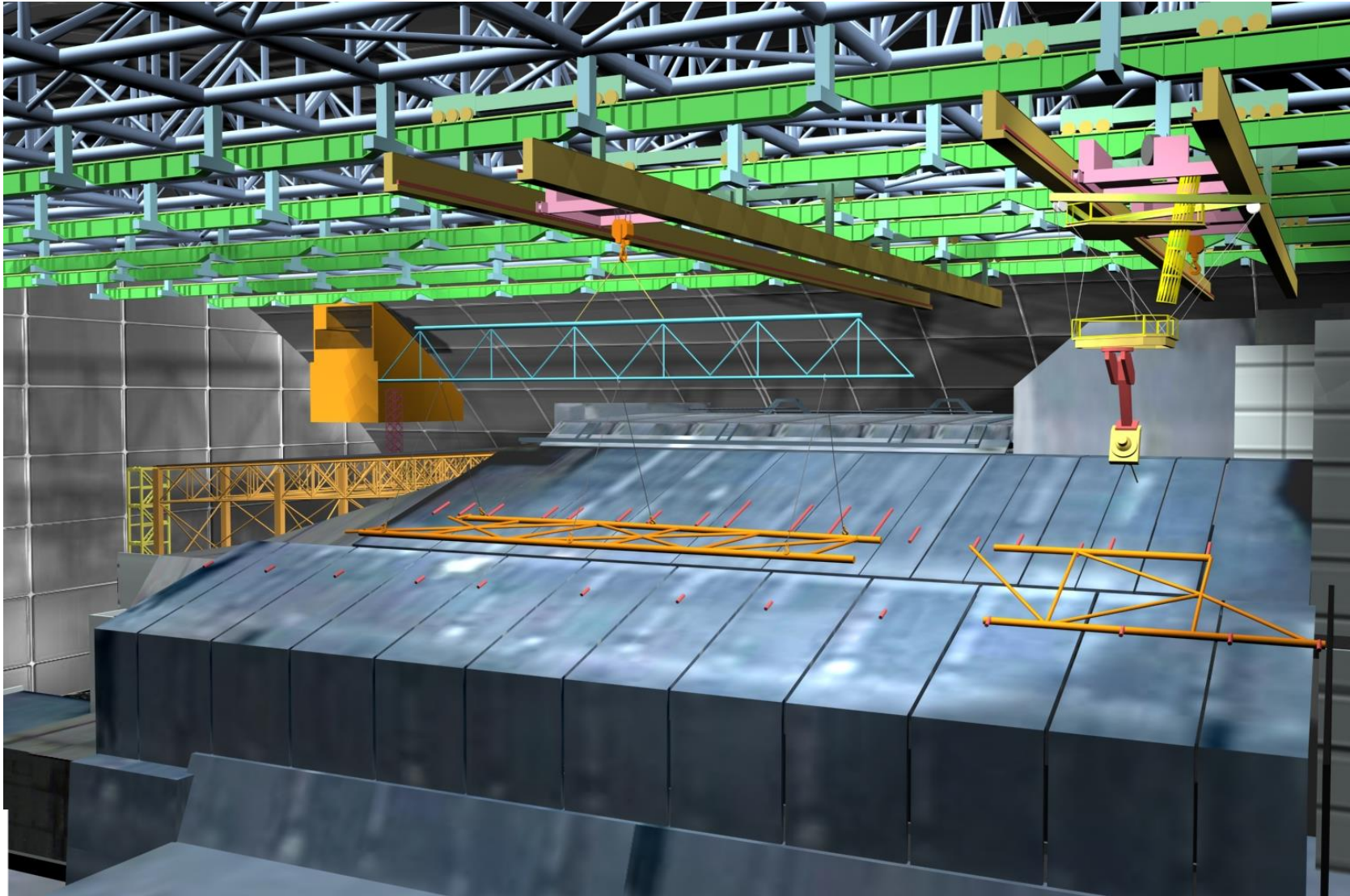
Place, where personnel will enter to box for transportation to work area



Detaching of the fram from support brackets and cutting into 3 fragments



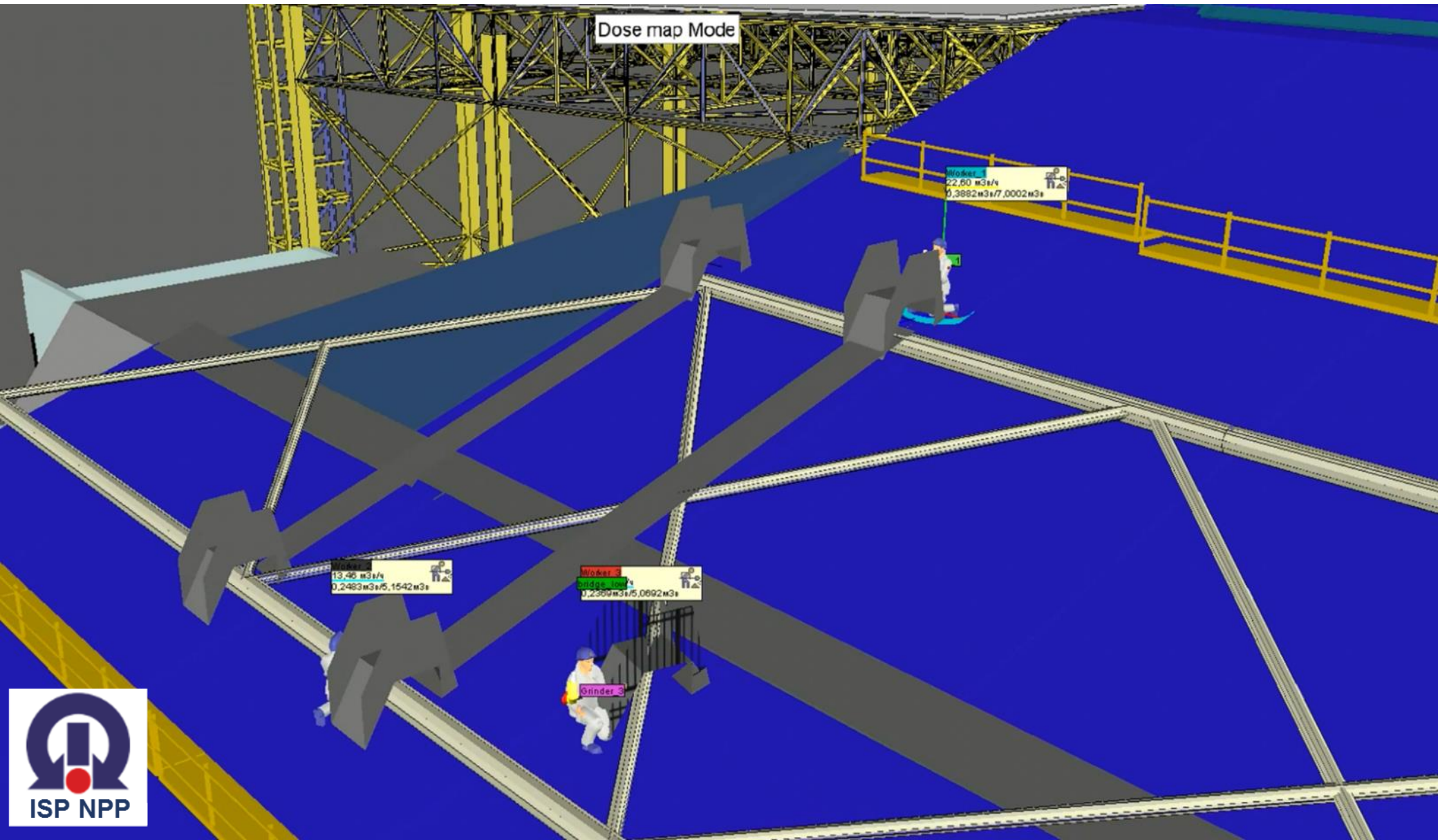
Relocation of the frame fragment onto the handling area



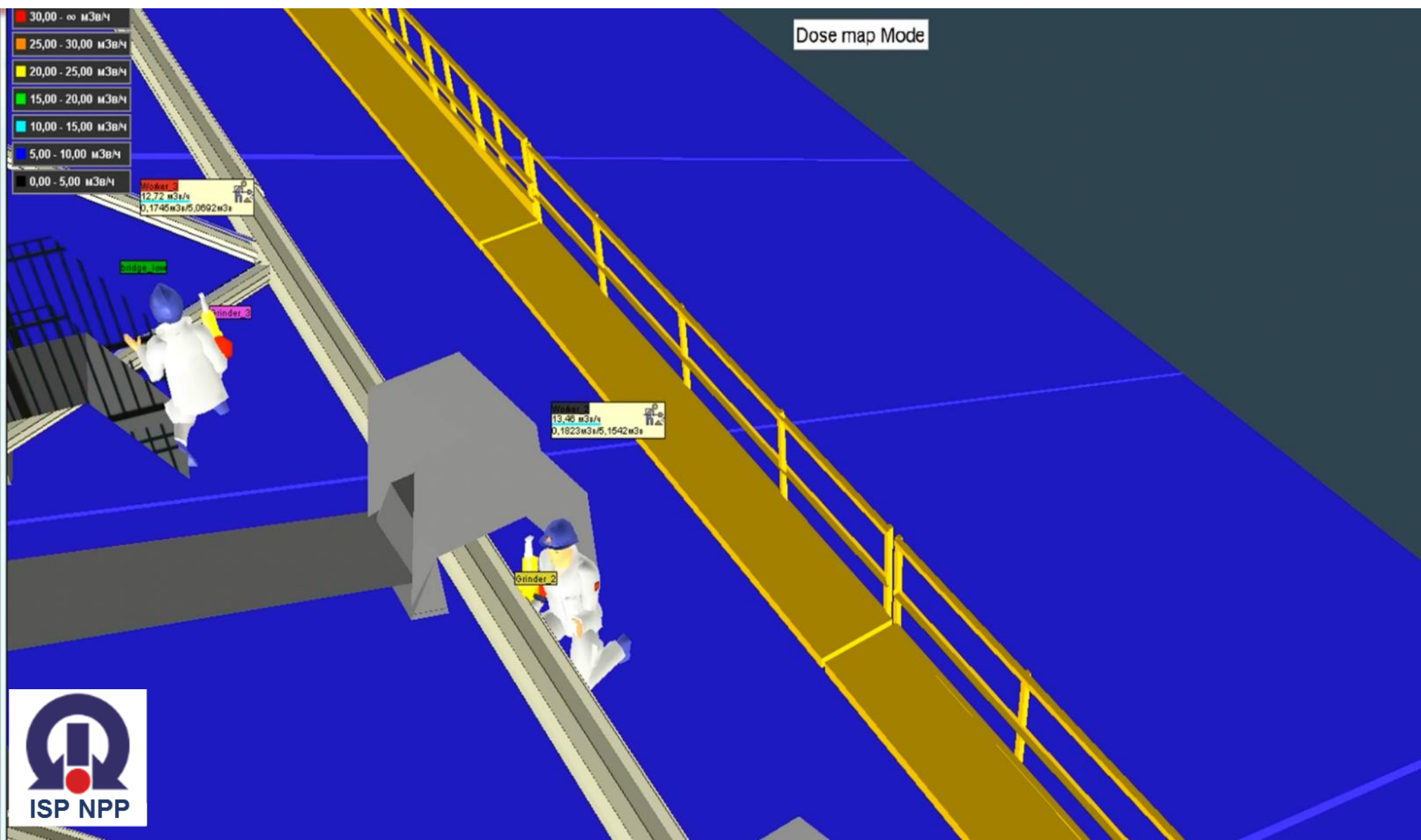
Fragmentation of the dismantled element



The use **Vrdose** planner for exposure dose calculation



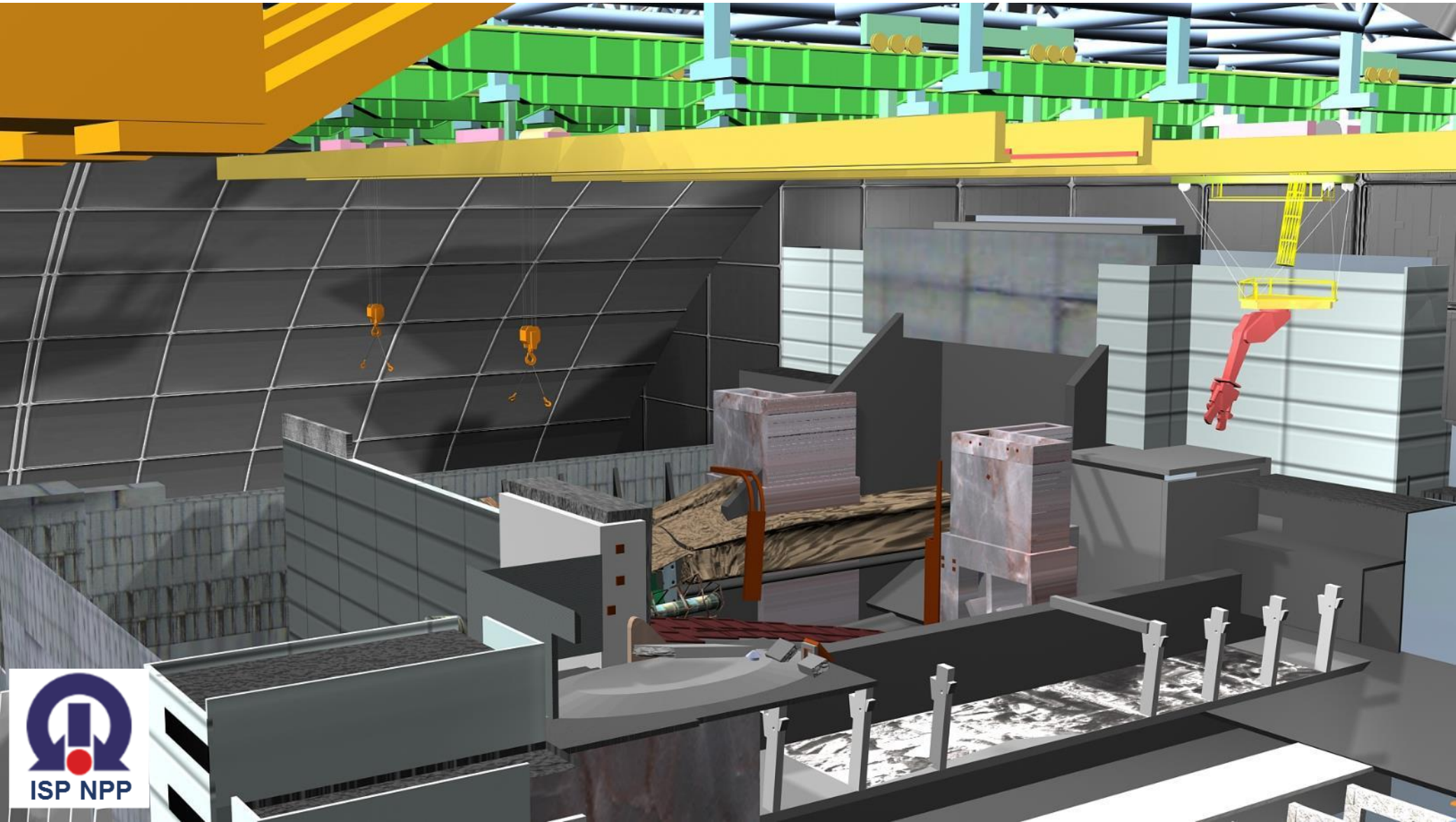
Calculation of personnel radiation exposure dose during of the metal frame element cutting



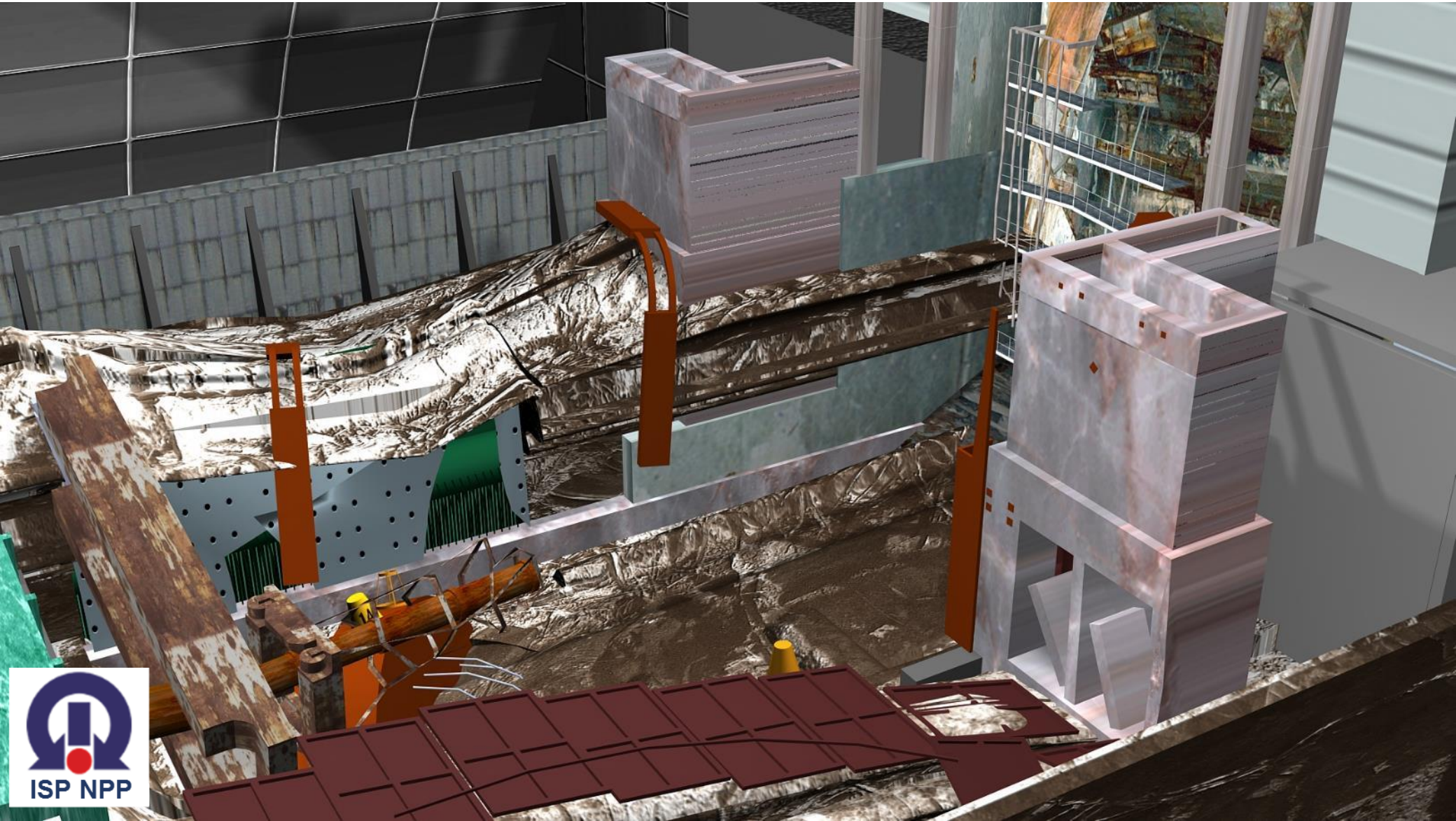
Comparative analysis of the correspondence of radiation doses values

Type of work (according SAR)	Dose rate according to SAR, mSv	Dose rate according to VRDose Planner, mSv
Marking with paint of bracket C1	0,4	0,24
Marking with paint of bracket C2	0,4	0,25
Marking with paint of bracket C3	0,49	0,58
Marking with paint of bracket C4	0,49	0,74
Cutting of fastenings of walking bridges of lower zone of the farm	4,18	2,72
Stroking of the node C1	1,85	1,42
Stroking of the node C2	2,16	1,78
Stroking of the node C3	4,81	3,9
Stroking of the node C4	4,36	2,9
Cutting of bracket C1	2,36	2,18

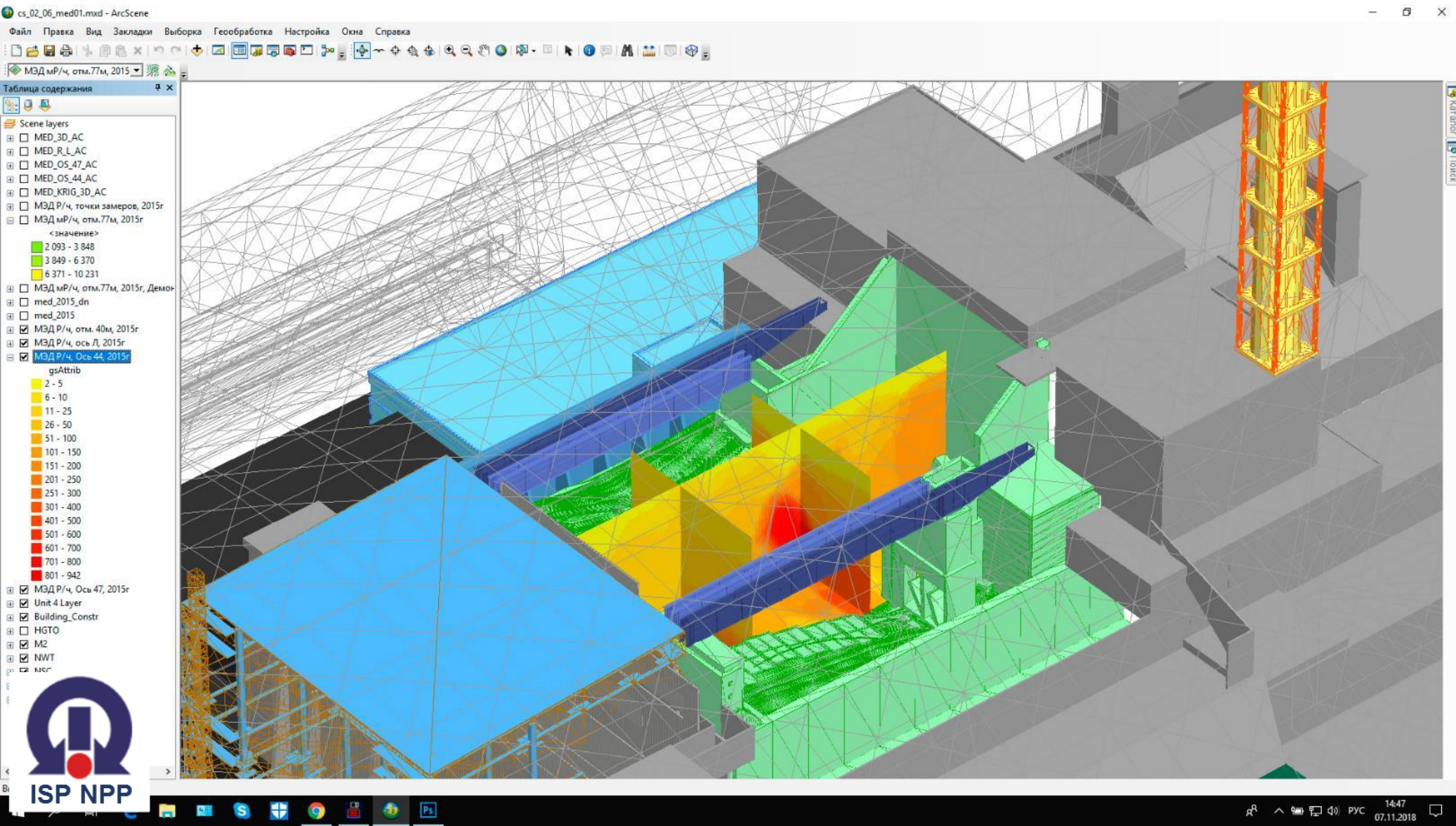
The view of the Shelter object after the completion of dismantling work



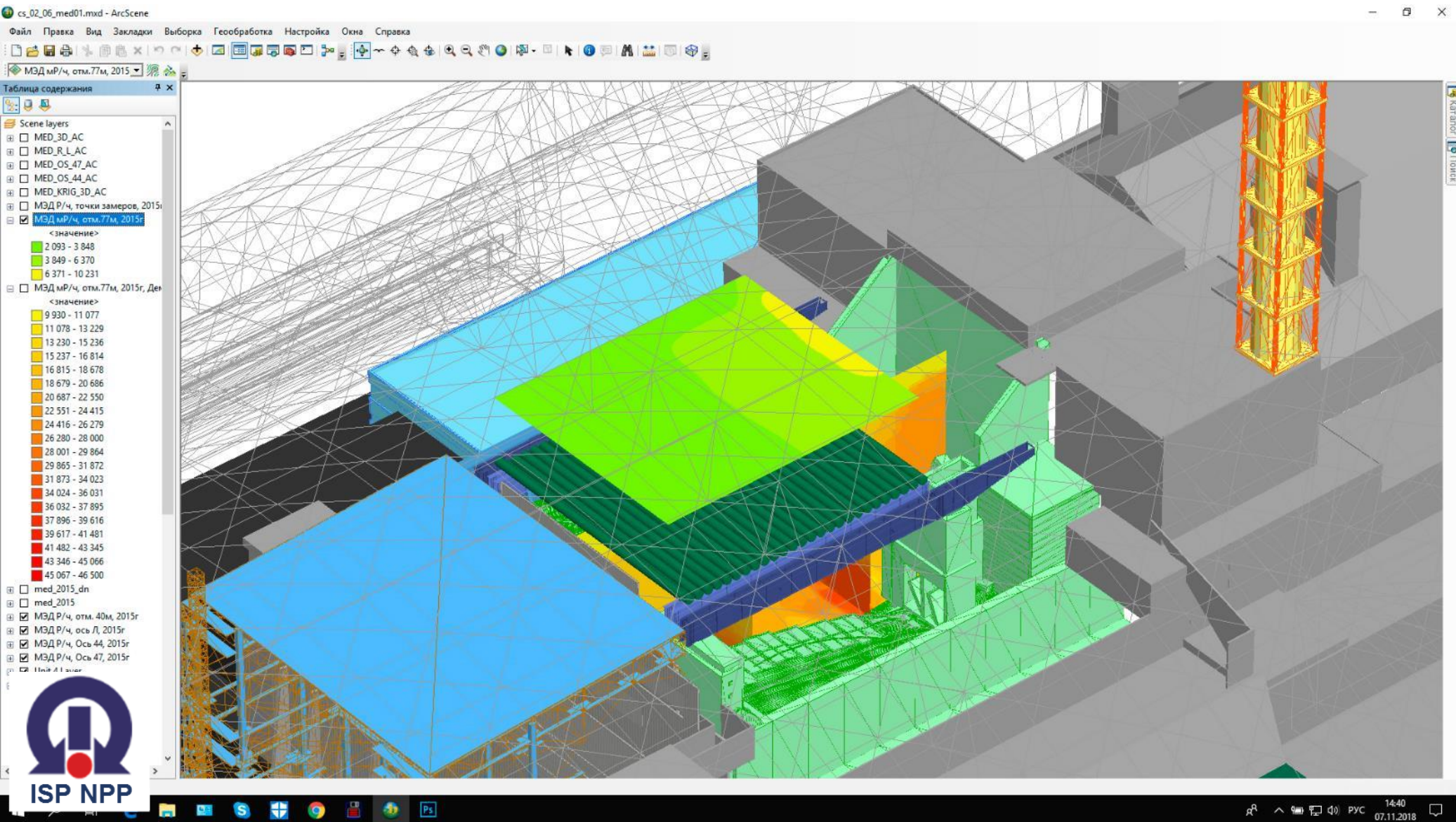
The model of the 4th block reactor after the dismantling of the unstable Shelter object constructions



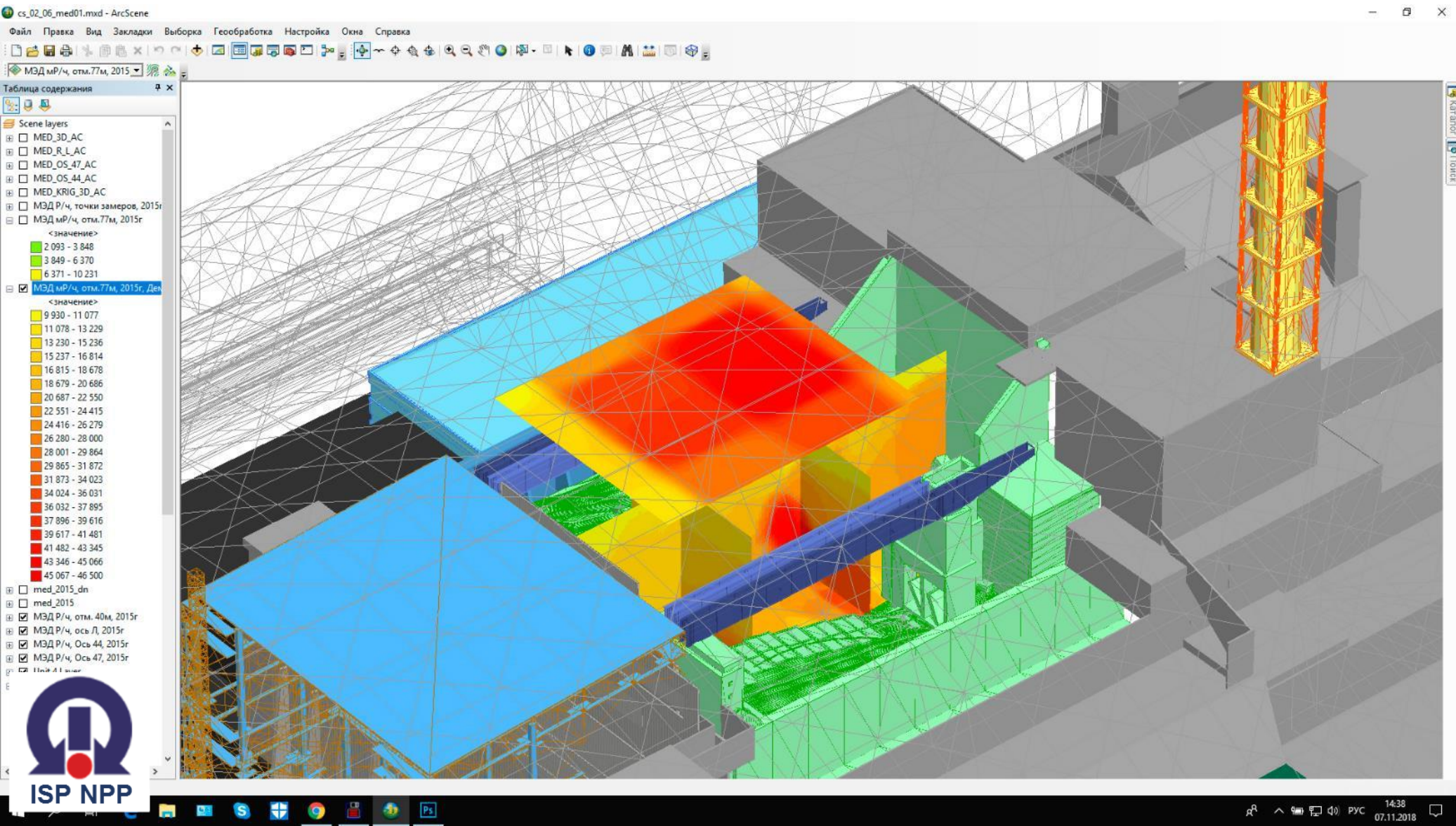
3D model of radiation condition on the ruined reactor #4 of Chernobyl NPP



Modeling of radiation conditions with the presence of the pipes roof over the reactor



Modeling of radiation conditions after the removal of the pipes roof over the destroyed reactor



The example of the work for extraction of nuclear materials from the Shelter object

