



## ABOUT US

A company founded in Zagreb, Croatia, with its lead specialists working in non-destructive testing industry for over 35 years. With engineers experience and skill, we are focused on providing complete and high-end solutions in non-destructive testing for nuclear, hydro, thermoelectric and other industries

- Inspection systems
- Manipulators
- Control systems
- Software
- Eddy current instruments and probes
- Ultrasonic instruments and probes
- Visual inspection equipment

Our staff is qualified and certified for:

- Certified as per ASNT/SNT-TC-1A/CP189 and ISO 9712
- Qualified Data Analyst (QDA) for eddy current inspections as per EPRI program
- Most advanced non-destructive testing including:
  - Phased Array (PA) UT techniques
  - Time-Of-Flight Diffraction (TOFD) UT techniques
  - Long Range Ultrasonics (LRUT) / guided waves techniques
  - Magnetic Flux Leakage (MFL) techniques
  - Metal Magnetic Memory (MMM) techniques
  - Acoustic and acoustic correlation techniques
- Equipment certification
- Personnel education and training

## REFERENCES

OF HRID-NDT SPECIALISTS & HRID-NDT Ltd.

### RPV (PWR/BWR) Inspections:

NPP Kozloduy, Unit 1-6, Bulgaria  
 NPP V.C.Summer, USA  
 NPP Maine Yankee, USA  
 NPP Diablo Canyon, USA  
 NPP Callaway, USA  
 NPP Maanshan, Unit 2, Taiwan  
 NPP Mine Yankee, USA  
 NPP Krsko, Slovenia  
 NPP Vogtle, Unit 1, USA  
 NPP Loviisa, Unit 2, Finland  
 NPP Kewaunee, USA  
 NPP Fort Calhoun, USA  
 NPP Turkey Point, Unit 3, USA  
 NPP Callaway, USA  
 NPP Monticello, USA (core shroud)

NPP Crystal River, USA  
 NPP Tianwan, PR China  
 NPP Angra, Brazil  
 NPP Zaporozye, Ukraine  
 NPP South Ukraine, Ukraine  
 NPP Three Mile Island, USA  
 NPP Oconee, USA  
 Petrochemical Plant Kutina, Croatia  
 TPP Plomin 1, Croatia  
 TPP Jertovec, Croatia  
 TPP Zagreb 1&2, Croatia  
 TPP INA Vinil, Croatia  
 Chemical Plant PAG, Croatia

### Steam Generators & Heat Exchangers Inspections:

NPP Armenia, Armenia  
 NPP Krsko, Slovenia  
 NPP Kozloduy, Unit 1-6, Bulgaria  
 NPP Loviisa, Finland  
 NPP Paks, Unit 1-4, Hungary  
 NPP North Anna, USA  
 NPP Vogtle, USA  
 NPP Farley, USA  
 NPP Mc Guire, USA  
 NPP Maanshan, ROC China  
 NPP Braidwood, USA  
 NPP Byron, USA  
 NPP Diablo Canyon, USA  
 NPP Davis Besse, USA  
 NPP Callaway, USA  
 NPP H.B. Robinson, USA  
 NPP Salem, USA  
 NPP South Texas, USA  
 NPP SONGS, USA  
 NPP Shearon Harris, USA  
 NPP Waterford, USA  
 NPP V.C. Summer, USA  
 NPP Oconee, USA  
 NPP Arkansas, USA

### RPVH & BMN Inspections:

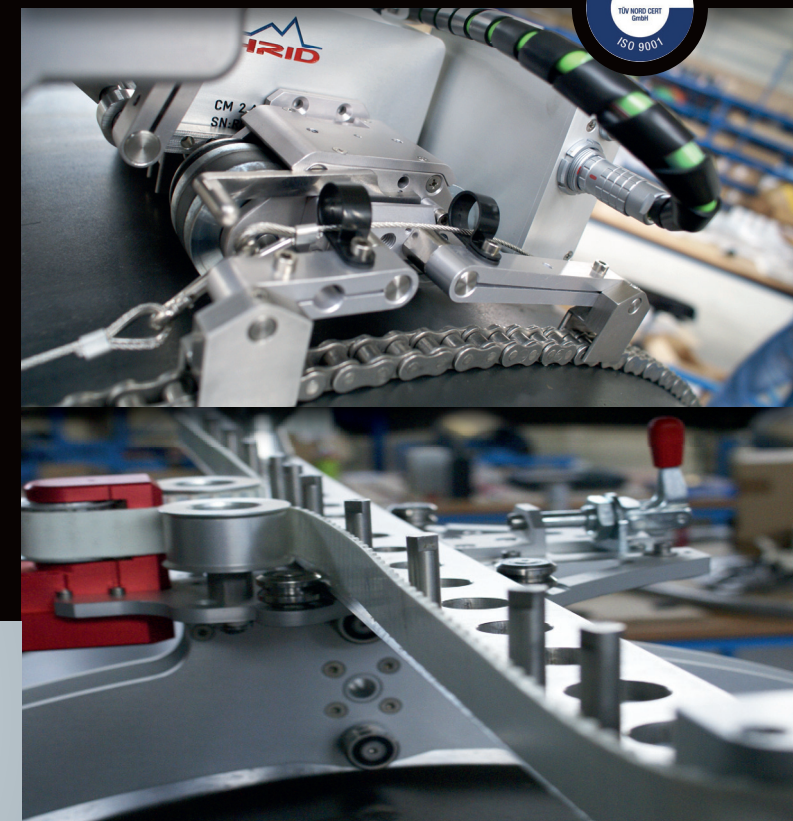
NPP Loviisa, Unit 2, Finland  
 NPP Turkey Point Unit 3&4, USA  
 NPP St. Lucie, USA  
 NPP ANO 1, USA  
 NPP Calvert Cliffs, Unit 1, USA  
 NPP Millstone, Unit 2, USA  
 NPP Salem, USA  
 Chalon, France  
 NPP McQuire, USA  
 NPP Palisades, USA

### WWER 1200/1000/440 Inspection & Plugging Activities, Equipment Supply:

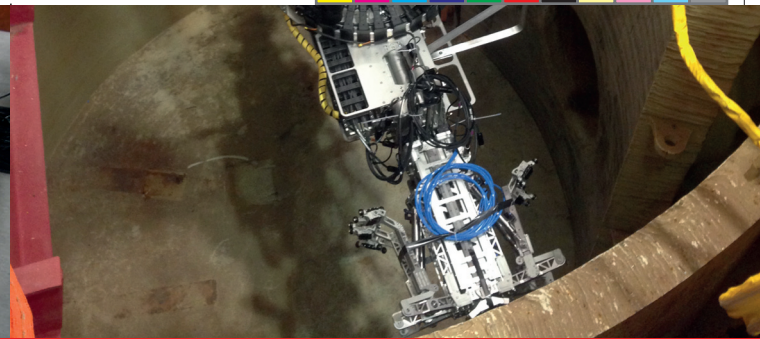
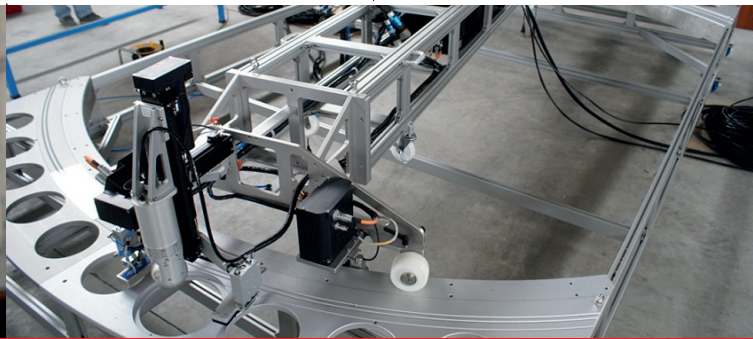
NPP Kozloduy Unit 1,2,3,4,5,6  
 NPP Armenia Unit 2  
 NPP Loviisa 1,2  
 NPP Paks Unit 1,2,3,4  
 NPP Zaporoskaya 1,2,3,4,5,6  
 NPP Kola  
 NPP Tianwan 1,2  
 NPP Kudankulam 1  
 Technatom/Spain  
 Institute Vujje/Slovakia  
 Atomenergoremont/Russia  
 Institute VNIIAES/Russia  
 Leningradskaya Unit 2  
 Novoronezhskaya Unit 2

# EXCELLENCE ABOVE ALL

Organization for Technology Development and Application



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 URL: www.hrid-andt.hr  
 E-mail: hrid@hrid-ndt.hr



## PRODUCTION AND CERTIFICATION OF INSPECTION SYSTEMS FOR NUCLEAR POWER PLANTS

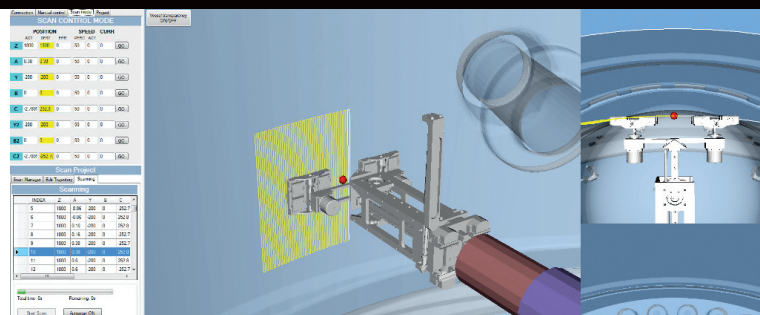
Qualified inspection systems for non-destructive inspection of vital WWER 440/1000/1200 and PWR nuclear power plants components according to RD EO 0487-05, ENIQ and IAEA methodologies.

Equipment and software related to WWER NPP developed and manufactured by HRID-NDT Ltd. for Leningradskaya NPP and Novovoronezhskaya NPP.

- Piping welds and elbows – ultrasonic inspection of DU300, DU350 and DU850 pipelines
- Reactor pressure vessel and its internals – ultrasonic and visual inspection
- Reactor pressure vessel internals from outside – visual inspection
- Steam generator secondary side – visual inspection
- Bolts – eddy current and ultrasonic inspection
- T-welds on tubes to pipe connections – ultrasonic and visual inspection
- Threaded holes – eddy current, ultrasonic and visual inspection
- Main circulation pump – ultrasonic welds inspection and visual inspection
- Flange of reactor pressure vessel – eddy current, ultrasonic and visual inspection
- Reactor pressure vessel head – eddy current, ultrasonic and visual inspection
- Upper part of reactor control tubes – visual inspection
- Shells on primary circuit components – ultrasonic and visual inspection

## TRAINING AND CERTIFICATION OF NDT PERSONNEL

- Ultrasonic Testing (UT)
- Magnetic Particle Testing (MT)
- Liquid Penetrant Testing (PT)
- Visual Testing (VT)
- Eddy Current Testing (ET)



## SOFTWARE

Our software packages are designed to work with our manipulators and inspection systems for ultrasonic, eddy current and visual inspection. Main advantages of our software:

- 3D virtual reality
- Offline mode for operator testing
- Collision detection
- Speed and stability
- Modularity
- Used latest advanced technology

## EDDY CURRENT PROBES PRODUCTION

- Surface eddy current probe
- Bobbin probes
- Array probes
- Rotating probes (RPC)
- Eddy current remote field probes (RFT)
- Eddy current near field probes (NFT)
- Calibration standards

## PARTNERS AND COOPERATION

- CoreStar, USA
- IHI Southwest Technologies Inc, USA
- AREVA intelligenDT, Germany
- Westinghouse, USA
- Faculty of Engineering and Computing, Zagreb, Croatia
- IAEA – International Atomic Energy Agency