



Projects “Earthquake Engineering” involving Max Aicher Engineering GmbH, including previous activities of its employees

**2008 – 2010 PROJECT – OL3, Finland**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Design Response Spectra due to Airplane Crash and Design Basis Earthquake for selected Nodes of APC-Shell	Guide YVL, ETC-C, US NRC, ASCE
Design Response Spectra for Vent Stack, Load Case DBE	Guide YVL, ETC-C, US NRC, ASCE
Influence of Platforms on Equipments and Supports	Guide YVL, ETC-C, US NRC, ASCE
Response Spectra of Reactor Building Complex - Methodology for Consideration of Localized Amplification Effects in Vertical Direction	Guide YVL, ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform 30UJA18SP037	Guide YVL, ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform 30UJA23SP055	Guide YVL, ETC-C, US NRC, ASCE

**2009 – 2010 PROJECT – KK Grafenrheinfeld, Germany**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Evaluation of finite element model of the Diesel building	ASCE 04-
Dynamic analyses for the load case earthquake	KTA, ETC-C, US NRC, ASCE

**2011 – 2011 PROJECT – MOST, Germany**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Dynamic Analyses	KTA, ETC-C, US NRC, ASCE

**2011 – 2011 PROJECT – Fennovoima, Finland**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Dynamic calculations, floor response spectra & sensibility analysis for Simo site	Guide YVL, ETC-C, US NRC, ASCE
Dynamic calculations, floor response spectra & sensibility analysis for Pihäjoki site	Guide YVL, ETC-C, US NRC, ASCE



## 2008 – 2012 PROJECT – NPP Taishan, China – Part 1

Work Description	Codes & Standards
Design Response Spectra for EUR and Site Specific Seismic Excitation for HQT Building	ETC-C, US NRC, ASCE
Design Response Spectra for EUR and Site Specific Seismic Excitation for Waste Processing Buildings HQB/HQS	ETC-C, US NRC, ASCE
Time Histories and Relative Displacements for Cranes and Special Components	ETC-C, US NRC, ASCE
Design Response Spectra for EUR and Site Specific Seismic Excitation for Emergency Diesel Building	ETC-C, US NRC, ASCE
Design Response Spectra for EUR and Site Specific Seismic Excitation for Essential Water Pump Buildings HP	ETC-C, US NRC, ASCE
Design Response Spectra for the Base Slab of the Nuclear Auxiliary Building HNX for EUR and Site Specific Seismic Excitation	ETC-C, US NRC, ASCE
Displacements between Structures of the Reactor Building Complex due to Seismic Excitation	ETC-C, US NRC, ASCE
Influence of Coupling and Decoupling of UCA to UJA/UJB Building on the Dynamic Response	ETC-C, US NRC, ASCE
Design Response Spectra for EUR and Site Specific Seismic Excitation for Nuclear Auxiliary Building HNX	ETC-C, US NRC, ASCE
Design Response Spectra due to Airplane Crash and Design Basis Earthquake for selected Nodes of APC-Shell	ETC-C, US NRC, ASCE
HPI Building - Seismic Analysis for Design Check of the Base Slab	ETC-C, US NRC, ASCE
Verification of Acceleration Time Histories for Design of Polar Crane	ETC-C, US NRC, ASCE
Design Response Spectra for EUR and Site Specific Seismic Excitation for Access Building HW	ETC-C, US NRC, ASCE
HPC Building Unit 1 - Seismic Analysis for Design Check of the Base Slab	ETC-C, US NRC, ASCE
Artificial Time Histories for Dynamic Analyses of Steel Platforms HRA 4401 and HRA 4404	ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform HRA 4404 - Reaction Forces due to Load Case Earthquake	ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform HRA 4404 - Stability of Concrete Slabs due to Load Case Earthquake	ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform HRA 4003 - Reaction Forces due to Load Case Earthquake, Site Specific Soil Conditions	ETC-C, US NRC, ASCE



## 2008 – 2012 PROJECT – NPP Taishan, China – Part 2

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Stability of Steel Platform HRA 4003, Load Case Earthquake	ETC-C, US NRC, ASCE
South Electrical Building and North Electrical Building - Earthquake Design Floor Response Spectra for Selected Locations	ETC-C, US NRC, ASCE
Influence of Platforms on Equipments and Supports	ETC-C, US NRC, ASCE
Sloshing Water Calculation for Spent Fuel Pool and Shielding Pool, Load Case DBE	ETC-C, US NRC, ASCE
Maximum Displacements of Polar Crane's Hook, Load Case DBE	ETC-C, US NRC, ASCE
Displacements between Buildings due to Site Specific Earthquake Excitation	ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform HRA 4401 - Reaction Forces due to Load Case Earthquake	ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platform HRA 4401 - Stability of Concrete Slabs due to Load Case Earthquake	ETC-C, US NRC, ASCE
Design Response Spectra at Selected Locations for Earthquake Excitation of PGA 0.25g and 0.45g	ETC-C, US NRC, ASCE
Differential Displacements between Selected Locations at the HNX and HD Buildings	ETC-C, US NRC, ASCE
Response Spectra at Selected Locations of Main Control Room for Earthquake Excitation of PGA 0,25g and 0,45g	ETC-C, US NRC, ASCE
Dynamic Analysis of Steel Platforms HRA 4003 and HRA 4004	ETC-C, US NRC, ASCE
Enveloped Design Response Spectra for the Main Control Room (MCR)	ETC-C, US NRC, ASCE



## 2009 – 2012 PROJECT – Kerena, Germany/France

Work Description	Codes & Standards
Kerena FE-Model of the UCA Building	ETC-C, US NRC, ASCE, KTA, ASN
Kerena Dynamic Analysis for the Reactor Building, Load Case Design Basic Earthquake	ETC-C, US NRC, ASCE, KTA, ASN
Kerena Dynamic Analysis for the Reactor Building, Load Case Design Basic Airplane Crash	ETC-C, US NRC, ASCE, KTA, ASN
Kerena - Reactor Building and UCA Building. Seismic Analysis for EUR Soil Conditions (PGA 0.25g)	ETC-C, US NRC, ASCE, KTA, ASN
Kerena - Reactor Building and UCA Building. Seismic Design Response Spectra for EUR Soil Conditions (PGA 0.25g)	ETC-C, US NRC, ASCE, KTA, ASN
Kerena - Reactor Building and UCA Building Design Response Spectra for Load Case Airplane Crash (APC)	ETC-C, US NRC, ASCE, KTA, ASN
Kerena - Reactor Building and UCA Building. Comparison of Design Response Spectra for Load Cases DBE and APC	ETC-C, US NRC, ASCE, KTA, ASN
Kerena - Reactor Building and UCA Building - Differential Displacements for Selected Locations	ETC-C, US NRC, ASCE, KTA, ASN
Sloshing Water Calculation for Spent Fuel Pool, Load Case DBE	ETC-C, US NRC, ASCE, KTA, ASN
Dynamic analysis of covering steel plates for fire protection ceilings in UJB, load case DBE/ APC	ETC-C, US NRC, ASCE, KTA, ASN

## 2014 – 2014 FA3, France

Work Description	Codes & Standards
Enveloped Design Response Spectra for the Main Control Room (MCR)	ETC-C, US NRC, ASCE, ASN

## 2012 – 2014 PROJECT – La Haque, France

Work Description	Codes & Standards
La Hague Building R7 - Dynamic Excitation for Load Case DBE	ETC-C, US NRC, ASCE, ASN
Marcoule - Dynamic Excitation for Load Case DBE	ETC-C, US NRC, ASCE, ASN
Marcoule - Dynamic Properties of AVM Building	ETC-C, US NRC, ASCE, ASN
Marcoule - Floor Response Spectra of AVM Building	ETC-C, US NRC, ASCE, ASN
Marcoule - Dynamic Properties of HVAC Building	ETC-C, US NRC, ASCE, ASN
Marcoule - Dynamic and Static Calculation of AVM Building	ETC-C, US NRC, ASCE, ASN
Marcoule - Dynamic and Static Calculation of HVAC Building	ETC-C, US NRC, ASCE, ASN



**2015 – 2015      Krsko, Slovenia**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Foundation Condition Analysis for Krsko Spent Fuel Dry Storage	ETC-C, US NRC, ASCE, ASN

**2015 – 2015      PROJECT – Neckarwestheim & Phillipsburg, Germany**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Technical Specification for Dynamic Analyses, Load Case Design Basis Earthquake (DBE)	KTA, EC8
SAL-N Building - Evaluation of Impedance Functions and Pile Forces for the Load Case DBE	KTA, EC8
RBH-N Building - Evaluation of Impedance Functions and Pile Forces for the Load Case DBE	KTA, EC8

**2014 – 2015      PROJECT – HPC, United Kingdom**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Methodology for the Design of the Main Control Room In Sab Division 2 Level +16.30m (Dynamic Part) for Uk1220	ETC-C, US NRC, ASCE

**2014 – 2015      PROJECT – Karisma, France**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Application of Enhanced Soil Structure Interaction (ESSI) for the KARISMA Project; comparison of applied calculation methods (SINAPS)	ETC-C, US NRC, ASCE

**2008 – 2016      Areva Research and Development Projects, Germany, France**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Reduction of APC Induced Vibrations	KTA, ETC-C, US NRC, ASCE
Component-Anchorage-Structure Interactio	KTA, ETC-C, US NRC, ASCE
Calculation tool for Anchor Plates - Development of a routine for an efficient calculation of anchor plate stresses and anchor forces under consideration of nonlinear bedding conditions	KTA, ETC-C
High G - ESSI Simulation of Karisma	US NRC, ASCE



**2014 – 2017 PROJECT – EPR-NM, France**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Single Containment Design - Case Studies for the Load Cases Design Basis Earthquake (DBE) and Airplane Crash (APC)	RCC-CW, ASN
Response Spectra for HL 2+3, Load Case Commercial Airplane Crash (APC)	RCC-CW, ASN
Review of EDF experimental program	RCC-CW, ASN
Evaluation of the Nuclear Island Finite Element Model	RCC-CW, ASN
Evaluation of the HQA Building Finite Element Model	RCC-CW, ASN
Design Response Spectra for the Buildings of the Nuclear Island	RCC-CW, ASN
Design Response Spectra for the HQA Waste Building	RCC-CW, ASN
Stability Verification for the Inner Structure of the Nuclear Island	RCC-CW, US NRC, US SRP

**2014 – 2017 PROJECT – SINOP-ATMEA, Turkey, Japan**

<b>Work Description</b>	<b>Codes &amp; Standards</b>
Review and Consultancy of Mitsubishi Reports Response Spectrum for Required Nodes and Damping Factors (RB+SAB+FB) for Various Buildings	RCC-CW, US NRC, US SRP, ASCE
Assessment of Result of Seismic Response Analysis (Galleries)	RCC-CW, US NRC, US SRP, ASCE
Solution of ATMEA Rel. Disp. Drift Problem	RCC-CW, US NRC, US SRP, ASCE
Reviews of Atmea MHI/Obayashi reports	RCC-CW, US NRC, US SRP, ASCE
Assessment of APC Induced Vibrations due to Military Aircraft and B747	RCC-CW, US NRC, US SRP, ASCE
Evaluation of Load Time Function for B747	RCC-CW, US NRC, US SRP, ASCE
Shock Damage Footprint Assessment for Type A Aircraft	RCC-CW, US NRC, US SRP, ASCE
Assessment of APC Induced Vibrations due to Military Aircraft and B747	RCC-CW, US NRC, US SRP, ASCE
APC Design Specification - Protection Against Airplane Crash	RCC-CW, US NRC, US SRP, ASCE
Evaluation of Load Functions of Large Commercial Airplanes	RCC-CW, US NRC, US SRP, ASCE