

IRVING JOSUÉ CORTÉS ITURRIAGA

PROCESS ENGINEER

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PROFESSIONAL SUMMARY

Process Engineer in the Food & Beverage industry with 10+ years of experience in turnkey projects, involved in design, installation, commissioning, startup, and operator training. Strong background in sanitary and hydraulic design, complemented by the development of custom software tools to streamline engineering and documentation workflows.

WORK EXPERIENCE

- Tetra Pak México** | *Process Engineer* *Cuatitlán Izcalli*
may/2022 – apr/2024
- Development of pre-projects and process implementations for dairy and beverage plants.
 - Equipment specification, process design, and commissioning support.
- Proisan** | *Process Engineer* *Tlalnepantla & Zapopan*
apr/2021 – apr/2022
- Design and installation of UV lamp systems for water treatment.
 - Design of CIP units and design and implementation of improvements to existing systems.
- Rapsi** | *Process Engineer* *Naucalpan*
apr/2015 – apr/2020
- Design of CIP, syrup rooms, and process skids for beverage and sauce industries.
 - Hydraulic analysis and mechanical supervision during installation and startup.
- CTYOP** | *Process Engineer* *Villahermosa & Minatitlán*
jan/2011 – nov/2014
- Basic and detailed engineering for process units, oil separators, and pilot plants.
 - Development of PFDs, P&IDs, and 3D models for process facilities.

SELECTED PROJECTS

- Design, automation, installation, and commissioning of a complete syrup room for the soft drink industry, with finished syrup storage capacity of 66,000 liters.
- Design, automation, installation, and commissioning of a manual syrup room for the soft drink industry, including a CIP unit, with finished syrup storage capacity of 50,000 liters.
- Design of a pilot plant for the sulfuric acid industry, focused on safety.
- Design of a fish oil dosing system for the beverage industry, ensuring accurate and controlled ingredient addition.
- Design of fire protection systems for crude oil separation battery units, aligned with industrial safety requirements.
- Design, installation, and commissioning of UV lamp systems for process water treatment across multiple soft drink manufacturing plants.
- Design, automation, installation, and commissioning of a tomato sauce formulation plant with a production capacity of 9,500 kg/h.

ENGINEERING SOFTWARE & AUTOMATION TOOLS

- Development of a software tool for centrifugal pump sizing, including automatic generation of detailed calculation reports **with step-by-step engineering justification**.
- Development of a hydraulic analysis software for piping systems, **supporting engineering design and validation**.
- Development of a software tool for piping sizing, **based on hydraulic and process parameters**.
- Development of a software tool for CIP unit sizing, **supporting standardized and optimized cleaning system design**.
- Development of a software tool for simultaneous updates across multiple client deliverables, **enabling automatic modification of headers and footers, significantly reducing editing time, minimizing errors, and enforcing documentation standardization**.
- Development of a project cost estimation and quotation management tool, **integrating structured databases to improve accuracy, consistency, and efficiency in project proposals**.
- Development of intelligent engineering tools for P&ID and 3D models, including:
 - 2D and 3D objects library
 - Custom AutoCAD commands
 - Automatic detection of duplicated tags
 - Components identification by material, size or pipe specification.
 - Automatic generation of tag lists
 - Automated material take-offs from 3D models

EDUCATION

Instituto Tecnológico de Minatitlán – B.S. Chemical Engineering (Process Specialty) 2004 – 2009

Professional project: “Dynamic Simulation of the Solvent Recovery System” at PEMEX Morelos Petrochemical Complex (Coatzacoalcos, Veracruz)

TECHNICAL SKILLS

- Field inspection.
- Development and review of PFDs, P&IDs and isometrics.
- Development of line and equipment indices.
- Sizing of pipes, tanks and equipment such as pumps.
- Hydraulic analysis and calculation of pressure drops.
- 3D model drawings according to pipe specifications.
- Design of sanitary valve clusters and divert plates.
- Syrup room design.
- Design of CIP units.
- Design of CIP units for dryers.
- Elaboration of operating philosophies.
- Preparation of sequence diagrams.
- Preparation of operation manuals.
- Sanitary welding inspection.
- Support in start-up.
- Operator training and evaluation.
- Preparation of interactive project book (administration of technical documents, manuals, certificates, drawings, ...)

COURSES

- Good Manufacturing Practices (GMP) for Food Industry
- Sanitary Welding Inspection
- Thermal Energy Management
- Work at Heights Supervisor
- Leadership & Empowerment