

### PyroGenesis Announces ISO 9001:2008 Certification for the Production of Metal Powders; Provides Update.

**MONTREAL, Quebec (February 26<sup>th</sup>, 2018)** - PyroGenesis Canada Inc. (http://pyrogenesis.com) (TSX-V: PYR), (the "Company", the "Corporation" or "PyroGenesis") a Company that designs, develops and manufactures plasma waste-to-energy systems and plasma torch systems, is pleased to announce today that it has received certification for the production of metal powders under a quality management system which complies with the requirements of ISO 9001:2008. This certification is an amendment to the Company's existing ISO certification, and pertains specifically to metal powder production, and was received under the auspices of a major independent risk and standards company; SAI Global.

Mr. P. Peter Pascali, President and CEO of PyroGenesis, provides an update on PyroGenesis Additive's activities in the following Q&A format. The questions, for the most part, are derived from inquiries received from investors, analysts, and potential customers:

## Q. You announced today that you received the ISO Certification amendment for the production of metal powders. That was fast. What does this mean to the company exactly?

**A**. We did receive this certification relatively quickly, and I would partly attribute that to our history of meeting stringent military specifications/standards in our other major projects. We always have been ISO compliant and as such this amendment was relatively easy to obtain.

As we all know, having an ISO certification confirms that our management systems, manufacturing processes, and documentation procedures have met all the requirements for standardization, quality assurance, traceability, and batch to batch consistency. This gives prospective customers assurances that our house is in order. In addition, such efficient quality management systems will ultimately save time and money, as well as improve efficiencies.

We have found that many of our customers will only do business with vendors that are certified as ISO 9001 compliant, and many requests for quotes are from companies that make ISO 9001 certification a "must-have". We are also in the process of applying to AS9100D for the aerospace industry, and ISO 13485 for the medical devices industry.

In short, having this certification gives potential customers the additional confidence to accept PyroGenesis as a qualified vendor.

## Q. There has been a flurry of press releases announcing sample orders and significant NDAs being signed, then there was nothing. So, what happened? Has there been any other activity?

**A**. Rest assured, the level of activity, including both sample orders and NDAs has not abated, but in fact, has increased. The reason you haven't heard anything regarding this activity is simply because we no

longer consider additional sample orders and NDAs newsworthy. We decided that the first sample orders and NDAs were significant in that they were the first and as such we announced them as they occurred. We decided that subsequent orders and NDAs, have become part of the normal course of business and as such were not, as I said, newsworthy.

#### Q. The burning question is, with all this activity, where are the big orders?

**A.** I know it is hard to understand, as one might expect significant orders to be placed shortly after a sample order is requested, but PyroGenesis is actually ahead of the curve/schedule in this respect. Let me explain...

In order to appreciate this, one has to understand the ordering process which, although not carved in stone, it will, for the most part, follow this general pattern. Initial powder orders are placed by the customer who typically will perform some basic analytical tests to ensure the powder quality (such as sphericity, porosity, flowability, chemical purity, inclusions) is as we purport it to be, and meets their specifications. Once satisfied, they will then order larger quantities of powders for sintering testing of parts which will then be further analyzed for such characteristics as tensile strength, and density, amongst others. Once satisfied, another order for greater quantities is placed where the powder is then used to build a first batch of final parts using 3D printers. These parts are then further analyzed for part to part consistency. Once the homogenous nature of our powders is demonstrated, from batch to batch, the discussion with the customer turns to purchase orders or a strategic partnership.

The progression from a small "look-see" sample order to larger orders implies, at times, a change in strategic direction, or relationships, on the part of the customer, which, is normal but takes time. In other situations, the decision to make us a qualified supplier requires significant internal time and money, on the part of the customer. These are expected steps as the customer goes through the decision process, identifies/allocates the necessary funds, and ultimately allocates the time. Layering on top of this process is the fact that most of these customers already had a strategy in place before we came along.

All this to say, without going into all the details, we are at every one of these stages with one customer or another, which we never expected so early in the game. After all, we are less than 6 months from when ramp up was completed.

#### Q. You said that you are ahead of the curve/schedule. What else can you add?

**A.** This time last year, we did not have an operational powder production system, and we were relatively unknown in the industry despite having invented Plasma Atomization. As we are quite conservative by nature, internally, we worked under the assumption that it was going to be more difficult to open doors, so we allocated more time for market penetration.

We must admit that GE's acquisition of Arcam, and by default AP&C, helped the market focus on powder supply which in turn helped us, but we felt it was still going to take some time. All this to say, it has been less difficult to open doors.

A year ago, we never expected to be so far along, or to have accomplished this much, or to be in such

high-level discussions with major players so soon after ramping up. One year later, we have met the original schedule and had a system assembled, with a first test run, by March 31, 2017, ramp-up was completed in October 2017 and after being in operation for less than 4 months, we have managed to secure a large number of sample orders, signed significant NDAs, and are in discussion with several potential strategic partners. As if all this were not enough, during this time, we also managed to develop game-changing IP, and we are in the process of concluding an industrialization plan for a build-out which would be implemented on the signing of a significant take-or-pay contract.

#### Q. Industrialization plan? I thought you were already commercial?

A. Yes, we are. The difference between a commercial facility and an industrial plant is a bit subtle but it is important to understand and appreciate how far we have come and how we are proactively preparing for the future. A commercial facility demonstrates process control and repeatability, where there is continuous operation, and where R&D and special test runs for customers are also contemplated. It runs as needed. An industrial plant, on the other hand, is dedicated to continuous production, with no R&D, 24/7. A commercial facility may still be run by highly skilled technicians whereas an industrial plant can be run by less skilled operators.

It is currently estimated that our industrialization plan will incorporate cookie-cutter units, each with 3-5 powder production towers designed to build out to any contracted demand.

Our approach to the market is very conservative, which is why we probably have lasted so long. Our strategy is not to build excess capacity and wait for customers. This approach may be risky for a number of reasons. First, it is costly. Second, we do not want to find ourselves across the table negotiating price with a potential customer who knows we have excess capacity on our hands (which is hard to hide when a customer asks how fast you can deliver).

Our approach is built on the recent disruption in the supply chain caused by GE's acquisition of Arcam and by default AP&C, and the overall serious lack of quality independent powder producers. Recent discussions with potential customers confirm our supposition that these customers find our products compelling enough that they will allow us to grow into their need or, in cases where the need is developing as with new printer companies, grow in-step with their needs.

### Q. What type of feedback are you getting from your sample orders? Have you been rejected by anyone? Can you give us an example of feedback?

**A**. First and foremost, we have not received any negative comments on our powders and not one has been rejected. If one considers the number of sample orders delivered this is quite impressive. Furthermore, all the sample orders were paid for except for one, which was given for free.

As an example of feedback, we received results from one of the largest OEM Metal Printer manufacturers who had performed the usual characterization tests on our Ti-6Al-4V Grade 23 powders (composition, flowability, density, moisture). The results exceeded expectations and were exceptional especially when compared to powders from other suppliers. PyroGenesis' powders met or exceeded all the specifications required for the several series of tests. Now, additional powders will be procured to

make actual test parts to test tensile and yield strengths. As mentioned, the qualification process includes several stages of analysis and we are in the final stage. There is no reason to think that we will not succeed and become a primarily supplier to one of the OEMs sometime very soon.

This is just one example of the many customers which are at various stages of evaluation and discussions.

### Q. Let's turn to operations for a moment. Are you still running two shifts? Are you stockpiling? What are your plans for additional systems?

**A.** Currently we are operating with two shifts, and over the next few weeks will be adding overtime. We may add a third shift in the near future. We do not stockpile per se, but we do keep a small inventory in anticipation of demand.

Although I will not speak to specific demand I can share with you the fact that we are in continuous discussions for sample orders, repeat orders, long term orders, contract R&D, and strategic partnerships. As such, we have ordered the long lead items for two powder production systems, both of which should be fully operational by the end of July 2018. These new powder production units will incorporate some of the cutting-edge IP that we recently developed. We expect these units will cost significantly less to manufacture, generate higher production rates, and provide us with greater control over particle size distributions.

## Q. Let's get back to strategic partnerships. You have alluded to this before. What are we talking about? How close are you to a conclusion?

**A.** For obvious reasons, I cannot disclose to whom we are speaking or the specifics of the discussions, however, I can confirm that we are speaking to more than one player and that a successfully concluded agreement with any of them will be significant not just for PyroGenesis and our shareholders, but arguably for the marketplace as a whole. Pyogenesis has had quite a bit of success with strategic partnerships; one just need only to look at our relationship with the US military for proof.

Management is of the view that a well-structured partnership can not only accelerate PyroGenesis' growth but also open the doors to new revenue streams which otherwise would be long in coming.

As I said, we are involved in more than one discussion, with the longest one taking place for several months, and the most recent one over the past several weeks. I must caution readers that although everything looks very positive, these discussions could all go nowhere very quickly, although I highly doubt it given the level and type of discussions and the caliber of players.

# Q. This might be a good point to ask how you may answer those who say you sometimes announce things too early, like the spin-off of PyroGenesis Additive or that you do not do things fast enough like hiring a COO, or CFO, or more business development people, or or or....?

**A**. This is a very good question and as I have said before a lot has transpired in the world of Additive Manufacturing since we announced our desire to spin off PyroGenesis Additive. It would have been highly questionable to have continued along a path, ignoring all the changes, just because we announced we would. We are beholden to our shareholders and constantly review our decisions based on new information, all with the goal of maximizing shareholder value. I would challenge any investor to point to a time between when we announced our intention to spin off PyroGenesis Additive, and now, that would have maximized shareholder value more than if we did the spin off today. Today we have created more value in PyroGenesis Additive, and at the same time the non -additive part of PyroGenesis is tending towards profitability as noted in our last press release dated February 1<sup>st</sup>, 2018. Even with 20/20 hindsight our strategy to postpone the spin off was correct. Rest assured we are still committed to this spin off.

As far as those that say we are not moving fast enough in certain directions, particularly in hiring, I would say keep your comments coming. I read them all, and I would say you are all, for the most part, correct. In the world of limitless cash, we could do a lot of things faster. In the real world, we are challenged to make choices. Where is this next \$1 best spent? At what time do we sacrifice sales for technology, or technology for administration or any combination of the aforementioned? That is the challenges that face us every day. Would hiring a CFO have helped us with our technology improvements or sales with DROSRITE<sup>™</sup>? No. Would hiring a CFO have helped us during our ramp up and sample sales with PyroGenesis Additive? No. That is not to say that having additional help in that department wouldn't have helped. I am just saying the help would not have been worth the sacrifices which would have to have been made in other areas. These are the tough decisions we face every day, and you can rest assured the management of your Company takes these decisions very seriously. That is not to say we get it right each and every time but, given where we are, I would say we are doing very well.

#### Q. Conclusion?

**A.** We are entering into a very exciting period for PyroGenesis Additive. If the next year is anything like the past one has been, and I expect it to be even better, then hold onto your horses. Things are lining up well as our market penetration strategy is starting to bear fruit, and faster than we expected. Again, we fully expect that there will be disappointments along the way, but as I have said in the past, we will meet them as we have all previous challenges, and that is with a perseverance and tenacity that is unique to PyroGenesis.

In an unrelated matter, the Corporation announces today that it has granted stock options to acquire up to 200,000 common shares of the Corporation (the "Common Shares") to Mtre Ilario Antonio Gualtieri, Senior Legal Counsel and Corporate Secretary. The stock options have an exercise price of \$0.60 per Common Share and are exercisable over a period of five (5) years. The options are granted in

accordance with the Corporation's stock option plan and remain subject to regulatory and Exchange approval.

#### About PyroGenesis Canada Inc.

PyroGenesis Canada Inc. is the world leader in the design, development, manufacture and commercialization of advanced plasma processes. We provide engineering and manufacturing expertise, cutting-edge contract research, as well as turnkey process equipment packages to the defense, metallurgical, mining, advanced materials (including 3D printing), oil & gas, and environmental industries. With a team of experienced engineers, scientists and technicians working out of our Montreal office and our 3,800 m<sup>2</sup> manufacturing facility, PyroGenesis maintains its competitive advantage by remaining at the forefront of technology development and commercialization. Our core competencies allow PyroGenesis to lead the way in providing innovative plasma torches, plasma waste processes, high-temperature metallurgical processes, and engineering services to the global marketplace. Our operations are ISO 9001:2008 certified, and have been since 1997. PyroGenesis is a publicly-traded Canadian Corporation on the TSX Venture Exchange (Ticker Symbol: PYR) and on the OTCQB Marketplace. For more information, please visit www.pyrogenesis.com

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